Cornell Law Review

Volume 97
Issue 3 *March 2012*

Article 2

Making Sense of Intellectual Property Law

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MAKING SENSE OF INTELLECTUAL PROPERTY LAW

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Intellectual property (IP) scholars have long struggled to explain the boundaries of and differences between copyright and patent law. This Article proposes a novel explanation: copyright and patent can be fruitfully understood as establishing a dichotomy between two different groups of human senses. Copyright traditionally involves objects addressed to the senses of sight and hearing while products appealing to touch, taste, and smell are the province of utility patent law. The Article begins by establishing this descriptive proposition, and it shows how some of the most contested areas of IP (e.g., copyright's useful articles doctrine and design patent law) involve breaches of this sensory dichotomy. Next, I argue that the sensory dichotomy in IP reflects the sensory hierarchy in traditional Western aesthetic theory. According to this tradition, sight and hearing are "high" senses capable of unconstrained aesthetic and cultural experiences. Touch, taste, and smell, by contrast, are "low" senses because their connection to natural bodily needs constrains their aesthetic capacities. IP law's treatment of the senses in copyright and patent law matches this hierarchy.

In recent years, however, developments in the social sciences and aesthetic theory have undermined fundamental principles of Western aesthetic theory. This research suggests that sight and hearing are not as aesthetically unconstrained and functionless, nor are touch, taste, and smell as aesthetically constrained and functional, as was previously believed. Accordingly, I argue that IP law should treat appeals to the senses uniformly. Works that express or communicate ideas, emotions, or pleasures to any of the five senses in ways that create original works of authorship should be potentially copyrightable. The Article concludes with an analysis of this proposal's effects on various creative fields, including tactile objects, fashion, culinary dishes, and yoga.

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† Assistant Professor of Law, Chicago-Kent College of Law. I wish to thank Kate Darling, Jason DuMont, Howard Eglit, Jeanne Fromer, Wendy Gordon, Sarah Harding, Steve Heyman, Ed Lee, Mark Lemley, Jonathan Masur, Mark McKenna, Michael Meurer, Chris Schmidt, Dave Schwartz, Chris Seaman, Chris Sprigman, Ron Staudt, and Rebecca Tushnet for comments and advice on this Article. I am also grateful to attendees of the Works-In-Progress Intellectual Property Colloquium at Boston University School of Law, the Intellectual Property Scholars Conference at DePaul University College of Law, and the faculty workshop at Chicago-Kent College of Law. Amy Ballard, Amanda Hart, David Kim, Kacy King, Caidi Mammas, Megan Nolan, and Alex Quinn provided invaluable research assistance on the project.

"Going to the Feelies this evening, Henry?" enquired the Assistant Predestinator. "I hear the new one at the Alhambra is first-rate. There's a love scene on a bearskin rug; they say it's marvellous. Every hair of the bear reproduced. The most amazing tactual effects."[1]

INTRODUCTION

Imagine that Alice is trying to teach her young daughter to play catch with a tennis ball. Alice notices that the combination of her daughter's imperfect hand–eye coordination and the ball's rubber surface causes the ball to bounce out of her daughter's hand unless her daughter happens to time her grasp perfectly. Alice, a mechanical engineer by training, realizes that the ball would be much easier to catch if all of its energy was not transferred directly into her daughter's hand. To solve the problem, Alice designs a ball made from floppy, elastomeric filaments that radiate from a central core region. The filaments absorb excess energy when the ball strikes a person's hand, and they give way to the fingers easily, making the ball easy to grasp. It never occurs to Alice that her ball might be fun to hold or attractive to look at.

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1 ALDOUS HUXLEY, BRAVE NEW WORLD 39 (1932).

Now imagine Bruce, an industrial designer. Bruce is interested in the tactility of objects—how they feel in one's hands. He wants to make a product that is both soothing and fun to hold. He has the idea of creating a ball made from floppy, elastomeric filaments that radiate from a central core region. The central region is solid, creating a calming sensation in the holder when the ball is grasped firmly, while the floppy filaments produce little sensations of joy when brushed with the hand. Bruce's design is identical to Alice's. It never occurs to Bruce that his ball might be particularly easy for children to catch or attractive to look at.

Finally, imagine Catherine, an artist. Catherine is passionate about exploring visual form through modern consumer media such as plastics, aluminum, and paper. On a trip to the science museum with her son she sees one of those plasma electricity balls that when touched causes little streams of visible electricity to flow from the ball's core to its glass surface. When she gets back to her studio that afternoon she designs a small sculpture made of floppy, elastomeric filaments radiating from a central core region. To Catherine, the visual form of the sculpture symbolizes the vitality of human "energy," and she hopes that those who look at it will experience emotions of awe and wonder. Catherine's sculpture is identical to the balls created by Alice and Bruce. It never occurs to Catherine that the sculpture might be particularly easy for children to catch or delightful for people to hold. In fact, she would be appalled if people touched her sculpture.

Alice, Bruce, and Catherine have all designed the famous KOOSH ball,[2] albeit for very different reasons. Although they have each created the exact same work, if they seek legal protection for their creations through U.S. intellectual property (IP) laws, they will receive different treatment. When Alice seeks to protect the ball's usefulness as a training device for young children she will file for a utility patent. She will have to prove that the ball is useful, novel, and nonobvious.[3] If, after review,[4] she convinces the Patent Office that

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2 U.S. Patent No. 4,756,529 (filed July 12, 1988).

3 *See* 35 U.S.C. § 101 (2006) ("Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."); *id.* § 103(a) ("A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.").

4 *Id.* § 131 ("The Director shall cause an examination to be made of the application and the alleged new invention; and if on such examination it appears that the applicant is entitled to a patent under the law, the Director shall issue a patent therefor.").

she has met these requirements, she will receive a set of IP rights that will last for twenty years from the date she filed her application.[5]

The visual form of Catherine's sculpture, by contrast, will receive federal copyright protection from the moment it is fixed in a tangible medium of expression.[6] She may, in rare instances,[7] have to prove that the sculpture is original (i.e., not copied from another source) and minimally creative.[8] If she clears these low hurdles, she will obtain a set of exclusive rights that will last for the rest of her life plus an additional seventy years.[9]

If Bruce wants to protect the tangible feel of his design by preventing others from making similar balls, he will likely have to file the same utility patent application as Alice and clear the same high hurdles of usefulness, novelty, and nonobviousness. Should he instead seek copyright protection for the tactile features of the design, he would likely be unsuccessful. While copyright law protects the visual "aesthetic" form of works of authorship, it does not extend to the "functional" features of those works.[10] The tactile sensations of grasping Bruce's design are likely functional, and thus noncopyrightable, features of the design. Although Catherine's sculpture contains identical features, in her work they serve only the aesthetic purpose of portraying the visual form of the work and are entirely copyrightable.

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5 *See id.* § 154(a)(2) ("Subject to the payment of fees under this title, such grant shall be for a term beginning on the date on which the patent issues and ending 20 years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed application or applications under section 120, 121, or 365(c) of this title, from the date on which the earliest such application was filed.").

6 17 U.S.C. § 102(a) (2006) ("Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."); *id.* § 302(a) ("Copyright in a work created on or after January 1, 1978, subsists from its creation . . . .").

7 For example, if her registration is rejected by the Copyright Office or invalidated in an infringement action.

8 *See* Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991) ("Original, as the term is used in copyright, means only that the work was independently created by the author (as opposed to copied from other works), and that it possesses at least some minimal degree of creativity. To be sure, the requisite level of creativity is extremely low; even a slight amount will suffice. The vast majority of works make the grade quite easily, as they possess some creative spark, 'no matter how crude, humble or obvious' it might be." (citation omitted)).

9 *See* 17 U.S.C. § 302(a) ("Copyright in a work created on or after January 1, 1978 . . . endures for a term consisting of the life of the author and 70 years after the author's death.").

10 *See* OddzOn Prods., Inc. v. Oman, 924 F.2d 346, 347, 350 (D.C. Cir. 1991) (holding that the Copyright Office did not abuse its discretion in refusing to register a copyright for the KOOSH ball where the Copyright Office examiners refused to consider the feel of the ball as a basis for registration on the grounds that the feel was a "functional part of the work").

Considerable judicial and scholarly commentary has attempted to delineate the precise boundaries between copyright and patent law, often with limited success.[11] Both regimes aspire to improve the quality of life by promoting the "Progress of Science and useful Arts."[12] At a basic level, patent law is the domain of the useful and functional, while copyright law is the preserve of the aesthetic. But it is often difficult to determine whether a given work deserves copyright or patent protection. Copyright law struggles to distinguish between protectable aesthetic components and unprotectable functional ones, while patent law worries about the incorporation of "subjective" aesthetic standards in the realm of the purely useful.[13] The example of the KOOSH ball offers a novel way of reframing these issues.

In this Article, I argue that IP law, in its attempt to distinguish between aesthetics and utility, has established a dichotomy between works appealing to the different human senses. Works that appeal to the senses of sight and hearing—those that produce visual or aural sensation—are potentially subject to copyright protection. Works that appeal to the sense of touch—those that produce tactile, haptic,[14] proprioceptive,[15] or otherwise embodied sensation—are potentially subject to utility patent protection.[16] Classic examples demonstrate this dichotomy. Paintings and songs are appropriate subjects for copyright protection, while an ergonomically designed chair is an appropriate subject for patent protection.

Of course, many objects incorporate features that appeal to multiple senses, but those features are eligible for either copyright or patent protection only to the extent that they are directed at visual/aural

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11 For successful examples, see generally Jeanne C. Fromer, *A Psychology of Intellectual Property*, 104 NW. U. L. REV. 1441, 1483–1508 (2010) (arguing that the differences between copyright and patent law reflect differences in the styles of creativity and innovation associated with different products) and Jonathan Masur & David Fagundes, *Costly Intellectual Property*, 65 VAND. L. REV. (forthcoming 2012) (manuscript at 59), *available at* http://ssrn.com/abstract=1441987 (summarizing the various ways that costs associated with patent and copyright regimes affect social welfare).

12 U.S. CONST. art. I, § 8, cl. 8.

13 *See infra* Part II.B.

14 This Article uses the terms "tactile" and "haptic" synonymously. Alberto Gallace and Charles Spence note that the terms have different meanings in psychology literature:

> [T]he term "haptics" has a very specific meaning, restricted to describing those tactile stimuli that impinge on the skin, and which are perceived by means of a person actively palpating an object or surface, such as when actively exploring an object held in the hand. By contrast, the term "tactile" is used to describe those tactile stimuli that are delivered passively to the skin.

Alberto Gallace & Charles Spence, *The Science of Interpersonal Touch: An Overview*, 34 NEUROSCIENCE & BIOBEHAVIORAL REVS. 246, 247 n.1 (2010).

15 Proprioception is defined as "the perception of the position and movements of the body." OXFORD ENGLISH DICTIONARY (Dec. 2011), http://www.oed.com/view/Entry/267353#eid85617289.

16 For the moment, I am bracketing discussion of design patents. *See infra* Part I.C.2.

sensation on the one hand or tactile sensation on the other. Attempts to elide this sensory dichotomy are likely to meet with confusion and rejection. Predictably, copyright law's "useful articles doctrine" (protecting works of authorship that combine functional and aesthetic features) and design patent law (protecting the visual ornamental features of utilitarian objects) are among the most confused and contested areas in IP law.[17]

Part I of this Article establishes the descriptive claim that IP[18] can be understood, in part,[19] as establishing a dichotomy between works that generate visual and aural sensation and those that generate tactile, gastronomic, or olfactory sensation. It explores the ways in which IP law sorts works appealing to the different senses and the confusion caused by attempted transgressions of the sensory boundaries.

The critical tradition in academia teaches that differences typically imply hierarchies,[20] and this is as true for the senses as it is for race and gender. Recent work in the history of aesthetic theory has shown how philosophical accounts of the differences between the senses almost invariably attribute different values and potentials to the senses. Writers from Plato and Aristotle to modern aestheticians have distinguished between the "high" senses of sight and hearing and the

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17 *See infra* Part I.C.

18 References to IP in this Article refer only to copyright and patent law. At present, it ignores the interesting ways in which trademark law treats the different senses. *See, e.g.*, Amanda E. Compton, *Acquiring a Flavor for Trademarks: There's No Common Taste in the World*, 8 NW. J. TECH. & INTELL. PROP. 340, 354–59 (2010) (considering trademark protection for flavor). Beyond the fact that such an expansion would make the Article unwieldy, many of the basic issues involved in trademark law are different from those in copyright and patent law. Whereas copyright and patent seek to encourage the creation of products that have value in their own right, the principal goal of trademark law is to enable consumers to make better choices about the products they wish to buy. *See* Mark A. Lemley, *The Modern Lanham Act and the Death of Common Sense*, 108 YALE L.J. 1687, 1688 (1999). Accordingly, notions of the aesthetic or communicative value of the different senses arise in trademark law differently than in copyright and patent law because trademark law values a good's sensory qualities only as signals of other qualities and therefore need not seriously grapple with aesthetic theory.

19 Of course, patent law covers much more than inventions designed to generate tactile pleasure. Some inventions have no relationship to the human senses whatsoever including many inventions in the fields of electronics, software, and plants. In addition, the sensory distinction is certainly not the only or even the best way to think about the differences between copyright and patent. Other explanations based on economics, markets, and creativity are also valuable.

20 *See, e.g.*, MICHEL FOUCAULT, THE ORDER OF THINGS: AN ARCHAEOLOGY OF THE HUMAN SPECIES 145 (R.D. Laing ed., Random House 1st American ed. 1970) (1966) ("Method and system are simply two ways of defining identities by means of the general grid of differences."); WINTHROP D. JORDAN, WHITE OVER BLACK: AMERICAN ATTITUDES TOWARD THE NEGRO, 1550–1812 253 (1968) ("[O]n the spectrum of human colors [Europeans] were at one end, and it was very tempting, especially for light-skinned residents of the British Isles, to place them at the top.").

"low" senses of touch, taste, and smell.[21] While the sensations afforded by sights and sounds are deemed aesthetic, those derived from the touch, taste, and smell of objects are merely functional. While the former can produce art and enable transcendence of the body, the latter cannot aspire to truly artistic expression because they are mired in physical desires of the flesh. Painting and music can and should produce "art for art's sake," but the low pleasures arise only from bodily functions. Accordingly, visual and aural pleasures exist in the unconstrained realm of pure culture where anything goes regardless of taste. In contrast, the low senses are naturally determined and subject to biological constraints.

Part II argues that the hierarchy between sight and sound on the one hand and touch, taste, and smell on the other emerges in IP law as well. IP law's sensory dichotomy recapitulates the tradition in Western aesthetic theory that ascribes different values to different human senses. Copyright is the realm of aesthetic production, while patent protects creations that are merely utilitarian. Thus, since works appealing to the low senses can only be useful, nonexpressive, and functionally and biologically constrained, they are unsuited for copyright protection.

In Part III, I draw on recent research in contemporary and evolutionary aesthetics and haptic and culinary communication to challenge this sensory hierarchy. Traditional aesthetic theory views preferences for visual art and music as culturally relative, nonfunctional, and unconstrained. I argue that, over the last two decades, the strong version of this view has become increasingly unsupportable in light of discoveries in the emerging field of evolutionary aesthetics. According to this line of research, just as humans tend to prefer sweet and fatty foods because preferences for sweet and fatty foods generated survival advantages for our ancestors, humans will tend to prefer visual and auditory stimuli that conferred evolutionary advantages on our ancestors. This hypothesis finds support in crosscultural studies, experiments with "precultural" infants, and neuroimagining techniques that have found widespread preferences for many fundamental features of the visual and musical arts. As Denis Dutton writes, "[c]heesecake speaks to innate pleasure preferences, but so does Wagner's *Der Ring des Nibelungen*."[22]

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21 On the role of visual culture theory in the law, see generally Christopher J. Buccafusco, *Gaining/Losing Perspective on the Law, or Keeping Visual Evidence in Perspective*, 58 U. MIAMI L. REV. 609, 613–16 (2004) (applying the works of visual culture theorists to issues relating to the use of visual evidence at trial and in society more generally).

22 DENIS DUTTON, THE ART INSTINCT: BEAUTY, PLEASURE, & HUMAN EVOLUTION 99 (2009).

As evolutionary aesthetics has highlighted the functions and constraints imposed on visual and auditory pleasure, other new research undermines the notion that the low senses are incapable of expressive and aesthetic communication. Research on interpersonal touch and on haptic technologies (those designed to enable tactile engagement with objects and people) demonstrates the ways in which touch can be used to create meaning. Similarly, research on cuisine has shown how both elite and more mundane cooking can produce aesthetically meaningful and expressive combinations of tastes and aromas. Tactile and gustatory works now appear to fit well within traditional paradigms of aesthetic theory.

Part IV turns from the descriptive to the normative and argues for a change to IP law that recognizes the unity of the senses. I propose that the features of works that appeal to any of the senses in such a way as to express or communicate ideas, pleasures, or emotions should be potentially[23] copyrightable. Patent law should remain the appropriate regime for features of works that have nonexpressive and noncommunicative utilitarian value.

Returning to the KOOSH ball creations of Alice, Bruce, and Catherine, Alice's ball would remain an appropriate subject for patent protection, and Catherine's ball would still be copyrightable. To the extent that Bruce's design appeals to the sense of touch in such a way as to express or communicate ideas, pleasures, or emotions, it should fall within the province of copyright. Additionally, these categories should hold for works whose features include both aesthetic and functional aspects, and the law will have to devise some method for separating the aesthetic from the functional. But at least it will be putting things in the correct categories. The Article concludes with examples of how such an analysis might productively apply to fashion design, physical activities such as yoga, and culinary dishes.

By focusing on the formal structure of IP law, this Article sets aside fundamental issues about the utilitarian, welfarist consequences of altering IP law.[24] As I have argued in a previous paper, with respect to copyright protection of recipes, the law gets the right answer but for the wrong reason.[25] Copyright law fails to recognize culinary cre-

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23 I say "potentially" because the works will still have to clear copyright hurdles of originality and creativity. *See* Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991).

24 *See* Christopher Buccafusco & Christopher Jon Sprigman, *The Creativity Effect*, 78 U. CHI. L. REV. 31, 31 (2011) (arguing that cognitive biases associated with creation and ownership of IP may generate substantial inefficiencies in markets); Christopher Buccafusco & Christopher Sprigman, *Valuing Intellectual Property: An Experiment*, 96 CORNELL L. REV. 1, 25 (2010) (summarizing the results of a set of empirical studies designed to test the conditions under which creation and ownership inefficiencies occur).

25 *See* Christopher J. Buccafusco, *On the Legal Consequences of Sauces: Should Thomas Keller's Recipes Be* Per Se *Copyrightable?*, 24 CARDOZO ARTS & ENT. L.J. 1121, 1155–56 (2007).

ations as suitable for protection because it deems them either functional or unoriginal.[26] I argue that this ruling reflects a misunderstanding of the nature of gustatory communication and that culinary dishes are capable of meeting the formal demands of copyright law.[27] The lack of recognition is the right result, however, since other features of culinary industry perform the same creativity-protecting roles that formal law does.[28] Accordingly, copyrighting dishes would be economically inadvisable.

The same may be true for the fields discussed here. There are good reasons to think that fashion design and yoga may not need copyright protection to thrive creatively.[29] Nonetheless, such a conclusion reflects only the current state of those fields. Should things change such that some form of copyright protection becomes desirable, this Article clears the way for its recognition.

I
INTELLECTUAL PROPERTY AND THE DICHOTOMY OF THE SENSES

The U.S. Constitution empowers Congress to "promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."[30] Since the Founding, the parallel construction of the clause has been read to legitimate the creation of the separate fields of copyright and patent law—the former dealing with "Science," "Authors," and "Writings" and the latter with "useful Arts," "Inventors," and "Discoveries."[31] And since that time, Congress has established two distinct regimes with different rules governing subject matter, creativity hurdles, formalities, and scope of protection.[32] Under the current version of the copyright statute, protection is available to original (i.e., not copied) and minimally creative works of authorship as soon as they are fixed in a tangible medium of

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26 *See id.* at 1127–30.

27 *See id.* at 1130–40.

28 *See id.* at 1153–55.

29 *See* KAL RAUSTIALA & CHRISTOPHER SPRIGMAN, THE KNOCKOFF ECONOMY: HOW IMITATION SPURS INNOVATION (forthcoming May 2012).

30 U.S. CONST. art. I, § 8, cl. 8.

31 *See* L. Ray Patterson, *Understanding the Copyright Clause*, 47 J. COPYRIGHT SOC'Y U.S.A. 365, 367 (2000) ("The parallel construction makes it easy to identify the copyright clause: 'The Congress shall have Power . . . To promote the Progress of Science . . . by securing for limited Times to Authors . . . the exclusive right to their . . . Writings.'").

32 The first statutes relating to copyright and patent were passed in 1790. *See* Act of May 31, 1790, ch. 15, 1 Stat. 124 (establishing copyrights); Act of Apr. 10, 1790, ch. 7, 1 Stat. 109 (establishing patents). The copyright statute was entitled, "An Act for the encouragement of learning." 1 Stat. at 124. The patent statute was entitled, "An Act to promote the progress of useful Arts." 1 Stat. at 109; *see also* Patterson, *supra* note 31, at 367 n.6 (pointing out these different purposes and noting that courts often confuse them).

expression.[33] Copyright typically provides exclusive rights to reproduce, distribute, display, and perform the work, as well as the right to make derivative works,[34] and it typically lasts for the life of the author plus seventy years.[35] By contrast, the current version of the utility patent statute protects only useful, novel, and nonobvious inventions, which, unlike copyrightable works, must undergo scrutiny by the U.S. Patent Office before rights attach.[36] The owner of a patent has the exclusive rights to make, use, or sell products that include the patented invention for a period of twenty years from the date of filing the patent application.[37]

Copyright and patent law are supposed to embody "two hermetically sealed compartments," each governing their specific subject matter in the appropriate fashion.[38] Similarly, over the past two centuries, judges and scholars have struggled both to explain the distinction between the regimes and to keep their respective contents separate. Explanations have highlighted a range of possibilities, including the different values they promote and the economic and transaction costs they create,[39] as well as the different kinds of creativity responsible for generating new works and inventions.[40] Most of these explanations help clarify some important differences between copyright and patent, but they also tend to ignore others.

At a fundamental level, both copyright and patent law intend to improve the quality of life for citizens by promoting the creation of

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33 *See* 17 U.S.C. § 102(a) (2006) ("Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."); *id.* § 302(a) ("Copyright in a work created on or after January 1, 1978, subsists from its creation . . . .").

34 *Id.* § 106.

35 *Id.* § 302(a). For works made for hire and anonymous and pseudononymous works, protection lasts for 120 years from the date of creation or 95 years from the year of publication, whichever expires first. *Id.* § 302(c).

36 *See* 35 U.S.C. §§ 101, 103, 111, 131 (2006).

37 *Id.* § 271(a) ("Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent."); *id.* § 154(a)(2) ("Subject to the payment of fees under this title, such grant shall be for a term beginning on the date on which the patent issues and ending 20 years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed application or applications under section 120, 121, or 365(c) of this title, from the date on which the earliest such application was filed.").

38 *See* J.H. Reichman, *Charting the Collapse of the Patent-Copyright Dichotomy: Premises for a Restructured International Intellectual Property System*, 13 CARDOZO ARTS & ENT. L.J. 475, 480–81 (1995) (noting that many countries draw this distinction and that it is recognized in international law).

39 *See* Masur & Fagundes, *supra* note 11, at 31–33.

40 *See generally* Fromer, *supra* note 11, at 1483–1508.

valuable new works and inventions.[41] The two regimes appear to have divided the realm of valuable new products into two distinct categories. Copyright law promotes the creation of aesthetic products—those expressing ideas or emotions.[42] Patent law, by contrast, promotes useful products—those functioning to improve some aspect of the quality of life.[43] But even this initial distinction creates problems. If aesthetic works improve the quality of life, why should they not be considered "useful" and thus subject to the requirements of patent law?[44] At some level, all aesthetic products appear to serve some function; they instruct, inspire, or entertain us. Conversely, many inventions contain aesthetic components that produce pleasurable emotions or feelings. What is the difference between a painting that "looks good" and a chair that "feels good"?

One way to view this problem is to focus on the different human senses that copyrighted works and patented inventions address. Copyright law has, in effect, bracketed off that class of products whose "usefulness" or function entails the creation of pleasures[45] or sensations perceived by sight and hearing. As new media have emerged, those appealing to sight and hearing have fallen into the domain of copyright.[46] Accordingly, copyright protection exists for the visual expression of ideas and emotions in paintings, the aural expression of ideas and emotions in musical compositions, and the combination of sensory modalities in works of literature and film.[47] Patent law is left to

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41 *See, e.g.*, Lemley, *supra* note 18, at 1694 ("Patents and copyrights are created for an instrumental purpose that is directly related to the subject matter of protection: We want more of the sort of works that patent and copyright law protect.").

42 *See* Abraham Drassinower, *Authorship as Public Address: On the Specificity of Copyright Vis-à-vis Patent and Trade-Mark*, 2008 MICH. ST. L. REV. 199, 204 ("[W]orks of authorship . . . invite and elicit dialogue about the ideas to which they give expressive form.").

43 *See id.* at 215 ("[T]he question [in patent] is, 'is this new,' or, 'is this something that was previously unavailable to the public?'").

44 *See* Orit Fischman Afori, *Reconceptualizing Property in Designs*, 25 CARDOZO ARTS & ENT. L.J. 1105, 1114 (2008) ("Nevertheless, the aesthetic pleasure in a product is in and of itself a utilitarian value, and hovers between objective, functional benefit and non-objective, personal sensory benefit. Thus, the dichotomy between the two qualities, the functional and the aesthetic, soon breaks down . . . .").

45 For an interesting study of the law's treatment of pleasure, see generally Susan Reid, *Sex, Drugs, and American Jurisprudence: The Medicalization of Pleasure*, GENDER & SEXUALITY L. ONLINE, at 40–47 (2011), http://blogs.law.columbia.edu/gslonline/files/2011/04/Reid_Legal-Scholarship.pdf (describing ways in which litigants have challenged laws that criminalize pleasure).

46 *See, e.g.*, Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860 (1998) (codified as amended in scattered sections of 17 U.S.C.) (clarifying that copyright extends to a number of newer forms of media).

47 *See* 17 U.S.C. § 102(a) (2006) (providing a nonexclusive list of categories of works of authorship including: "(1) literary works; (2) musical works, including any accompanying words; (3) dramatic works, including any accompanying music; (4) pantomimes and choreographic works; (5) pictorial, graphic, and sculptural works; (6) motion pictures and other audiovisual works; (7) sound recordings; and (8) architectural works").

govern products that appeal to the other senses of touch, taste, and smell as well as those whose usefulness has no relation to the human body (e.g., a new invention for storing data on a computer chip). The remainder of this Part establishes this assertion and explores the difficulties IP law experiences when the senses escape their compartments.

A. Copyrighting Sights and Sounds

In a recent article, Anne Barron has suggested that copyright law borrows heavily from a tradition in aesthetic theory in which "the separate arts are distinguished from each other, and the essential components of each art carefully dissected, for the purpose of identifying their *aesthetic* limits and possibilities."[48] The goal of this approach is to confine the various arts into exclusive categories to isolate their formal characteristics and judge their respective achievements. Much of this work involves understanding the different senses the arts appeal to and the way they are perceived.[49]

Vision has been the dominant sense in Western cultural history,[50] and that dominance is evident in the early history of copyright law. The first copyright statute, the Act of May 31, 1790, provided protection for only three classes of works—maps, charts, and books—all of which are essentially visual media.[51] Over the next century, other visual media were added to the list: "engravings, etchings, and prints (1802); . . . photographs and negatives (1865); and paintings, drawings, chromolithographs, statuary, and 'models or designs intended to be perfected as works of the fine arts' (1870)."[52]

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48 Anne Barron, *Copyright Law and the Claims of Art*, 4 INTELL. PROP. Q. 368, 370–71 (2002). Barron follows the tradition from the eighteenth-century German critic Gotthold Ephraim Lessing through Clement Greenberg and his followers in the twentieth century. Although her arguments are specifically about the United Kingdom, they apply with similar force to U.S. copyright law.

49 *See id.* ("[T]hese efforts were oriented towards building an understanding of what is specific to each art: an account of the differences between the types of 'sign' each art employs ('natural' or 'arbitrary'); the sensory apparatus involved in the perception of these signs (*e.g.* sight, touch, hearing); and whether they are perceived in space or in time."). *See generally* W.J.T. MITCHELL, ICONOLOGY: IMAGE, TEXT, IDEOLOGY 116–49 (1986) (exploring the claim that "the most fundamental difference between words and images would seem to be the physical, 'sensible' boundary between the realms of visual and aural experience").

50 *See* MARTIN JAY, DOWNCAST EYES: THE DENIGRATION OF VISION IN TWENTIETH-CENTURY FRENCH THOUGHT 21–81 (1993) (discussing the dominant role vision played from the time of the ancient Greeks through the time of Descartes); *see also* Buccafusco, *supra* note 21, at 635 (discussing the links that Western society perceives between visual paradigms, on the one hand, and scientific discoveries and empirical inquiry, on the other).

51 Ch. 15, § 1, 1 Stat. 124, 124 (repealed 1802).

52 *See* JULIE E. COHEN ET AL., COPYRIGHT IN A GLOBAL INFORMATION ECONOMY 26 (3d ed. 2010).

The current copyright statute combines most visual media into a category labeled "pictorial, graphic, and sculptural works."[53] Copyright in these works extends to features that exhibit original and minimally creative visual *delineations* or *forms*.[54] For traditional visual arts such as painting, these features can include the use of line, shade, and color, as well as other aspects of the painter's "style"[55] to express ideas or emotions. For example, the court in *Steinberg v. Columbia Pictures Industries, Inc.* found protectable expression in the artist's selection of perspective, inclusion of visual details, and "sketchy, whimsical style" in which those details were rendered.[56] Describing the protectable originality and creativity in a photographic portrait seems more difficult, however, because the photographer is limited by both the medium and the subject. Yet the U.S. Supreme Court had no trouble describing the photographer's protected expression in a famous photograph of Oscar Wilde. It included the "visible form [created] by posing [Wilde] in front of the camera, selecting and arranging the costume, draperies, and other various accessories in said photograph, arranging the subject so as to present graceful outlines, arranging and disposing the light and shade, [and] suggesting and evoking the desired expression."[57] The combination of these features created a "harmonious" visible form that was eligible for copyright protection.[58]

In 1831, Congress for the first time extended copyright protection to works appealing to the sense of hearing.[59] Copyright in musical compositions extends to the original and creative use of rhythm, harmony, and melody[60] as well as any accompanying lyrics.[61] The history of music exhibits the dominance of the sense of sight in copyright law. When copyright in musical compositions originated, the only means of access to a composition were live performances and notated sheet music. The invention of player piano rolls around the turn of the twentieth century, however, provided a new medium for recording

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53 *See* 17 U.S.C. § 102(a)(5) (2006). These works "include two-dimensional and three-dimensional works of fine, graphic, and applied art, photographs, prints and art reproductions, maps, globes, charts, diagrams, models, and technical drawings, including architectural plans." *Id.* § 101.

54 *See* 37 C.F.R. § 202.10(a) (2010) ("In order to be acceptable as a pictorial, graphic or sculptural work, the work must embody some creative authorship in its delineation or form.").

55 *See, e.g.*, Steinberg v. Columbia Pictures Indus., Inc., 663 F. Supp. 706, 712 (S.D.N.Y. 1987) (discussing similarities of "style" between two drawings).

56 *Id.*

57 Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53, 60 (1884).

58 *Id.* at 60–61.

59 *See* Act of Feb. 3, 1831, ch. 16, § 1, 4 Stat. 436, 436.

60 *See* Bridgeport Music, Inc. v. UMG Recordings, Inc., 585 F.3d 267, 272 n.1 (6th Cir. 2009); Newton v. Diamond, 204 F. Supp. 2d 1244, 1249 (C.D. Cal. 2002).

61 17 U.S.C. § 102(a)(2) (2006).

and distributing compositions.[62] Musicians, and especially music publishers, wanting to reap the economic benefits of the new medium, sued the unlicensed producers of player piano rolls alleging that the rolls infringed the publishers' copyrights in the compositions. In 1908, the case reached the U.S. Supreme Court.[63] The issue before the Court was whether the rolls met the statutory definition of "copies."[64] Justice Day noted, "When the combination of musical sounds is reproduced to the ear it is the original tune as conceived by the author which is heard."[65] Nonetheless, he concluded, "These musical tones are not a copy which appeals to the eye. In no sense can musical sounds which reach us through the sense of hearing be said to be copies as that term is generally understood . . . ."[66] According to the Court, a musical composition "is not susceptible of being copied until it has been put in a form which others can see and read."[67] An English court had reached the same conclusion eight years earlier, holding that "[a] sheet of music is treated in the Copyright Act as if it were a book or sheet of letterpress."[68] The court went so far as to suggest a difference between "[t]he fundamental ideas underlying" the sheet music and the music itself: "Music appeals to the ear, but a sheet of music appeals to the eye . . . ."[69] Thus, although copyright was based on the creation of a "collocation" of sounds[70] appealing to the ear, protection of those sounds extended only to visibly intelligible copies. This ruling has since been amended by statute,[71] but it indicates the value that copyright law places on the sensory qualities of works.

Painting and music appeal to single senses, but some works appeal to a combination of sight and sound. Consider, for example, copyright law's treatment of literary works and dramatic compositions, both of which combine the two senses. The first copyright statute in-

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62 *See* STAFF OF THE SUBCOMM. ON PATENTS, TRADEMARKS, AND COPYRIGHTS OF THE S. COMM. ON THE JUDICIARY, 86TH CONG., COPYRIGHT LAW REVISION STUDIES: 26; THE UNAUTHORIZED DUPLICATION OF SOUND RECORDINGS 3 (Comm. Print 1961) (primarily by Barbara A. Ringer); Timothy Wu, *Copyright's Communications Policy*, 103 MICH. L. REV. 278, 297–301 (2004).

63 *See* White-Smith Music Publ'g Co. v. Apollo Co., 209 U.S. 1, 8–9 (1908).

64 *See id.* at 15–18.

65 *Id.* at 17.

66 *Id.*

67 *Id.*

68 Boosey v. Whight, [1900] 1 Ch. 122 at 123. The Court wrote,

> [Copyright] means that [holders] have the exclusive right of printing or otherwise multiplying copies of those sheets of music—i.e., of the bars, notes, and other printed words and signs on those sheets. But [holders] have no exclusive right to the production of the sounds indicated by or on those sheets of music.

Id.

69 *Id.* at 124.

70 *White-Smith Music Publ'g Co.*, 209 U.S. at 19 (Holmes, J., concurring).

71 *See* Act of Oct. 15, 1971, Pub. L. No. 92-140, 85 Stat. 391.

cluded books,[72] and in many ways they are the paradigmatic example of a copyrightable work. Following the Supreme Court's logic with respect to sheet music, literary works would seem to appeal to the sense of vision. Certainly the eyes perceive the words themselves. Even the stories told often communicate ideas by way of mental imagery that feels vaguely visual.[73] Yet many literary works are prized for the sonic quality of their diction and syntax. Indeed, as Judge Learned Hand noted, some literary works may not communicate any ideas at all.[74] According to Hand, such works pose no problem for copyright law: "Conceivably there may arise a poet who strings together words without rational sequence—perhaps even coined syllables—through whose beauty, cadence, meter, and rhyme he may seek to make poetry."[75] Just as music is copyrightable without being "representative," nonrepresentative literary works could be copyrightable if they possess formal qualities that express emotion.

The protection afforded dramatic compositions raised similar issues. In the 1868 case of *Daly v. Palmer*, the plaintiff alleged that the defendant copied the "railway scene" from the plaintiff's play.[76] In the scene (which has since been copied ad infinitum), one of the characters is tied to a railway track in front of an oncoming locomotive.[77] The plaintiff claimed that, although the defendant copied none of the plaintiff's dialogue, the defendant had pirated the dramatic—and economic—heart of the work.[78] The defendant, however, argued that the protectable elements of a dramatic work extended only to the dialogue between the characters (i.e., the auditory components of the work).[79] The court disagreed, explaining that dramatic works can be multisensory:

> Such a composition, when represented, excites emotions and imparts impressions not merely through the medium of the ear, as music does, but through the medium of the eye as well as the ear. Movement, gesture, and facial expression, which address the eye only, are as much a part of the dramatic composition as is the spoken language which addresses the ear only.[80]

In a later case, Justice Holmes offered a similar opinion: "[D]rama may be achieved by action as well as by speech. Action can tell a story,

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72 *See* Act of May 13, 1790, ch. 15, § 1, 1 Stat. 124, 124.

73 On literary and other types of "images," see MITCHELL, *supra* note 49, at 9–11.

74 *See* Reiss v. Nat'l Quotation Bureau, Inc., 276 F. 717, 718 (S.D.N.Y. 1921) ("There has of late been prose written, avowedly senseless, but designd [sic] by its sound alone to produce an emotion.").

75 *Id.*

76 *See* Daly v. Palmer, 6 F. Cas. 1132, 1132–33 (C.C.S.D.N.Y. 1868) (No. 3552).

77 *Id.* at 1133–34.

78 *See id.* at 1133–35.

79 *See id.* at 1133–36.

80 *Id.* at 1137.

display all the most vivid relations between men, and depict every kind of human emotion, without the aid of a word."[81]

Throughout the twentieth century, the subject matter eligible for copyright protection continued to expand. Copyright law grew to include, for example, motion pictures, choreography, and architecture.[82] At least as a matter of the formal qualities of these media, new visual and auditory media easily assimilated into the copyright regime.

B. Patenting Touch

In cordoning off products that appeal to sight and hearing, copyright law has left to patent law those that appeal to touch, taste, and smell or that have no sensory reference to the human body. Accordingly, since its origins, patent law has focused on tangible products—goods that could be held or touched. The initial patent statute enacted in 1790 authorized patents for "any useful art, manufacture, engine, machine, or device."[83] The latter four categories were specifically focused on the invention of products of physical substance, and early patent cases often invalidated patents for a lack of tactile engagement.[84] Over the past two centuries, patentable subject matter has expanded beyond the realm of eighteenth-century technological inventions, but the essential core of utility patent law remains focused on tangible products.

Utility patents, as their name suggests, require utility.[85] Although the courts have not developed a sustained jurisprudence on utility, inventions must provide "a new means of achieving a useful end or result."[86] As one patent scholar notes, this requirement excludes discoveries, however practical and useful, in the "nontechnological arts, such as the liberal arts [and] social sciences."[87] What types of discoveries fall into the category of "nontechnological arts?" New symphonies and novels will not qualify for patent protection,[88] but what about discoveries that appeal to the senses of touch, taste, and smell? Here, the courts have found utility in products that generate tactile, gusta-

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81 Kalem Co. v. Harper Bros., 222 U.S. 55, 61 (1911).

82 *See* 17 U.S.C. § 102(a) (2006).

83 Act of Apr. 10, 1790, ch. 7, § 1, 1 Stat. 109, 110.

84 Christina Bohannan & Herbert Hovenkamp, *IP and Antitrust: Reformation and Harm*, 51 B.C. L. REV. 905, 955 (2010).

85 *See* 35 U.S.C. § 101 (2006) ("Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter . . . may obtain a patent therefor . . . ."); *see also* Michael Risch, *Reinventing Usefulness*, 2010 BYU L. REV. 1195, 1196–97 ("While 'newness' receives constant attention and debate, usefulness has been largely ignored.").

86 1 DONALD S. CHISUM, CHISUM ON PATENTS § 1.01, at I-7 (2011).

87 *Id.*

88 *See* Kevin Emerson Collins, *Semiotics 101: Taking the Printed Matter Doctrine Seriously*, 85 IND. L.J. 1379, 1406 n.153 (2010).

tory, and olfactory sensation. Patents on "ergonomic" and "kinesthetic" designs abound without any question about their usefulness.[89] Similarly, Judge Richard Posner had no problem finding that a "sex aid"—or as he preferred to call it, a "sexual device"—was useful.[90] There is, however, no attempt to explain why tactile pleasure is "useful" but visual or auditory pleasure is not.

One can appreciate the ease with which utility patent law confronts appeals to touch, taste, and smell in patent law's "definiteness" jurisprudence. Utility patent law requires that patent claims be sufficiently definite for one skilled in the art to understand the nature and scope of the claimed invention.[91] This requirement ensures that other inventors can understand the claims to either improve on the invention or avoid infringing it.[92] In many technological areas, a patentee achieves definiteness by specifying the exact dimensions and functions of a product using quantitative measurements and formulae.[93] If the patentee fails to disclose sufficient criteria, the patent will be invalid.[94]

Ambiguous terms in patents are costly because they can make patents overbroad and unclear,[95] and courts faced with ambiguous claims are forced to either construe those terms more narrowly or invalidate the patent entirely. The latter will occur if the court determines that the claims are "insolubly ambiguous."[96] This often occurs if the claims involve "an inherently subjective concept."[97] Interestingly, patent claims associated with the senses of touch and taste do not seem to raise definiteness problems. For example, a claim involving a rear frame on a piece of yard equipment that was configured to allow the operator to "comfortably reach and operate the control system" was

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89 *See, e.g.*, Ergonomic Mouse, U.S. Patent No. 7,304,636 (filed July 27, 2004); Kinesthetic Ankle-Foot Orthosis, U.S. Patent No. 5,370,604 (filed Jan. 7, 1993).

90 *See* Ritchie v. Vast Res., Inc., 563 F.3d 1334, 1336 (Fed. Cir. 2009) ("Nevertheless . . . the plaintiffs' invention is useful . . . .").

91 *See* 35 U.S.C. § 112 (2006) ("The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use the same . . . .").

92 *See* 3 CHISUM, *supra* note 86, § 8.03[3]; Christa J. Laser, *A Definite Claim on Claim Indefiniteness: An Empirical Study of Definiteness Cases of the Past Decade with a Focus on the Federal Circuit and the Insolubly Ambiguous Standard*, 10 CHI.-KENT J. INTELL. PROP. 25, 27–28 (2010).

93 *See id.* at 35–36 (noting that chemical and mechanical patent claims are upheld more often than electrical claims and hypothesizing that this difference might arise because chemical and mechanical patents are described with precise technical language).

94 *See* 3 CHISUM, *supra* note 86, § 8.03.

95 *See* Laser, *supra* note 92, at 29.

96 *See, e.g.*, Halliburton Energy Servs., Inc. v. M-I LLC, 514 F.3d 1244, 1249–50 (Fed. Cir. 2008) (describing the insolubly ambiguous standard and its policy rationale).

97 *See* Viskase Cos. v. World Pac Int'l AG, 714 F. Supp. 2d 878, 887 (N.D. Ill. 2010).

held not insolubly ambiguous.[98] Similarly, courts have allowed other terms dealing with touch or taste, including "smooth,"[99] "extremely soft,"[100] "taste,"[101] and "smoke flavor."[102] As discussed later, terms referring to the sense of sight create problems.

C. Deviants and Misfits

When the senses stay in their hermetically sealed containers—sight and sound in the copyright container and touch, taste, and smell in the patent container—IP law functions smoothly. Cases in which one sense breaks out of its appropriate container and invades the other illustrate the point. When this occurs, implicit assumptions become apparent, and courts struggle mightily to keep things in their rightful places. The most confused and least satisfactory areas of IP law—copyright's useful articles doctrine and design patents—are examples of these deviants and misfits.[103]

1. *Copyrighting Touch and Taste*

Aesthetic creations do not always exist in a single media type. The paradigmatic copyrightable works are products of pure aesthetics—paintings, sculptures, and sonatas—whose forms are unconstrained by the banalities of utility or function.[104] But cocktail shakers can look like rocket ships, articles of clothing can include elaborate designs, and cars can be both beautiful and aerodynamic. Copyright law categorizes cocktail shakers, clothes, and cars as "useful article[s]" because they have "an intrinsic utilitarian function"—to mix cocktails, cover the body, and provide transportation, respectively.[105] Since copyright law protects only the "pictorial, graphic, or sculptural features that can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article," once a court de-

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98 *See* Toro Co. v. Ingersoll-Rand Co., 545 F. Supp. 2d 933, 938, 951–52 (D. Minn. 2008); *see also* Smartdisk Corp. v. Archos S.A., No. 2-05-CV-101, 2006 WL 3448645, *7 & n.8 (E.D. Tex. 2006) (holding that the phrases "housing which can be comfortably held in a user's palm" and "housing of a size to be held in the palm of a user's hand" in two patents' claims were not too indefinite).

99 Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 450 (Fed. Cir. 1986).

100 Regents of the Univ. of Cal. v. Micro Therapeutics, Inc., No. C03-05669, 2007 WL 734998, *18–20 (N.D. Cal. 2007).

101 *Viskase Cos.*, 714 F. Supp. 2d at 882.

102 Kowalski v. Mommy Gina Tuna Res., Civ. No. 05–00679, 2008 WL 4483774, *3–7 (D. Haw. 2008).

103 The terms "deviants" and "misfits" come from Reichman, *supra* note 38, at 504.

104 *See supra* Part I.A.

105 *See* 17 U.S.C. § 101 (2006) (internal quotation marks omitted).

termines an object is a useful article, it must determine whether its aesthetic features are separable.[106]

To determine whether a work is a useful article in the first instance, a court analyzes whether it has an "intrinsic utilitarian function."[107] The Copyright Act does not define utilitarian function, but it explicitly excludes works that "merely . . . portray the appearance of the article or . . . convey information."[108] Accordingly, a sculpture is not a useful article even though it may "function" to provide visual pleasure, signify the owner's taste and status, or cover a hole in the wall.[109]

Courts have been reluctant to call visual pleasure a utilitarian function. In *Gay Toys, Inc. v. Buddy L Corp.*, the court analyzed whether a toy airplane was a useful article.[110] The district court had found the toy was a useful article—children need toys for growing up, and the toy airplane "permits a child to dream and to let his or her imagination soar."[111] The Sixth Circuit disagreed, likening the toy to a painting: "To be sure, a toy airplane is to be played with and enjoyed, but a painting of an airplane, which is copyrightable, is to be looked at and enjoyed. Other than the portrayal of a real airplane, a toy airplane, like a painting, has no intrinsic utilitarian function."[112] According to the court, visual pleasure and its effect on the imagination are not utilitarian functions. Holding otherwise would be to say that "virtually any 'pictorial, graphic, and sculptural work' would not be copyrightable as a 'useful article.' A painting of Lindbergh's Spirit of St. Louis invites the viewer 'to dream and to let his or her imagination soar,' and would not be copyrightable under the district court's approach."[113] The court's logic, in other words, is that if visual delineation is functional, then works that are paradigmatically copyrightable are also functional. As in utility patent law, copyright law does not define functionality or utility. It does, however, make clear that expression and representation are neither functional nor utilitarian.

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106 *Id.* § 102(a)(5); *see also id.* § 101 (defining "[p]ictorial, graphic, and sculptural works"). If the work is not a useful article to begin with, the work's aesthetic features are copyrightable.

107 *See id.* § 101.

108 *Id.*

109 *See* 1 PAUL GOLDSTEIN, COPYRIGHT: PRINCIPLES, LAW AND PRACTICE § 2.5.3.1(a) (1989) (observing that "Section 101's use of the adjective 'intrinsic' to modify the term 'utilitarian function' presumably excludes such marginally useful works" as a person using a sculpture as a paperweight).

110 *See* Gay Toys, Inc. v. Buddy L Corp., 703 F.2d 970, 972–73 (6th Cir. 1983).

111 Gay Toys, Inc. v. Buddy L Corp., 522 F. Supp. 622, 625 (E.D. Mich. 1981), *vacated*, 703 F.2d 970 (6th Cir. 1983).

112 *Gay Toys*, 703 F.2d at 972–73.

113 *Id.*

If visual pleasure is not intrinsically utilitarian, is tactile pleasure? In *OddzOn Products, Inc. v. Oman,* the designer of the KOOSH ball filed suit when the Register of Copyrights denied his registration.[114] The designer claimed that the ball's visual character and tactile feel merited copyright registration.[115] The Register held that the ball was a useful article because the plaintiff designed the ball so that children could easily catch it.[116] As to the ball's visual character, the Register found the ball "basically constituted a sphere" and was thus insufficiently original or creative.[117] The Register further determined that "an object's tactility—the way it feels—is a functional part of the work and therefore not copyrightable."[118] In support of his argument, the plaintiff raised examples of museum programs that allow the blind to enjoy sculptures' tactile qualities.[119] The district court disagreed and upheld the Register's denial. The district court found that "the authorship involved in designing the work so that it functions to produce a certain touch is essentially the design of a utilitarian aspect of the work. As such, this authorship is not copyrightable because of the proscription in the law against protecting articles of utility."[120] The judge thought the plaintiff's argument that tactility is a form of copyrightable expression "proves too much, for, if it were correct, any object may be copyrighted on the basis of its feel."[121]

On appeal to the D.C. Circuit, the Register backed down from the claim that "feel" or "tactile qualities" definitively could not form the basis for copyright registration.[122] Instead, it argued that the ball's tactile feel was inseparable from its function.[123] The plaintiff ultimately conceded the conceptual separability point, and then-Judge Ruth Bader Ginsburg ruled that the Register had not abused its discretion by denying copyright protection.[124]

OddzOn Products suggests that feel equals function, and other cases support this conclusion. Garment designs are generally not

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114 *See* CIV. A No. 89-0106, 1989 WL 214479, *1 (D.D.C. Oct. 3, 1989), *aff'd,* 924 F.2d 346 (D.C. Cir. 1991).

115 *See id.* at *1–3.

116 *See id.* at *3.

117 *See id.* at *1.

118 *Id.*

119 *Id.* at *3.

120 *Id.*

121 *Id.*

122 *See* OddzOn Prods., Inc. v. Oman, 924 F.2d 346, 346, 349 n.3 (D.C. Cir. 1991) (internal quotation marks omitted).

123 *See id.*

124 *See id.* at 349–50. On appeal, the plaintiff tried to argue that the KOOSH ball was similar to the toy airplane in *Gay Toys* and thus should not be treated as a useful article. *See id.* at 350. The court ruled that it would not review this argument because it had not been raised during the application process or in the district court. *See id.*

copyrightable,[125] while the designers of "comfortable" garments and fabrics often successfully file for patent protection.[126] Similarly, ergonomic designs can receive utility patents, but copyright lays claim to separable aesthetic components through the useful articles doctrine.[127] Thus, while auditory and visual sensations are nonfunctional, copyright law tends to treat tactile sensation as functional.[128]

This tendency is striking in light of the Copyright Act (the Act). The current version of the Act protects original works of authorship "fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."[129] Yet despite the Act's reference to a work's tangibility, copyrightable subject matter curiously excludes media that specifically rely on the sense of touch to communicate.

Copyright law's treatment of gustatory sensation closely tracks its treatment of tactility.[130] Recent attempts to secure copyright protection for recipes failed in part because authorities have treated the creation of gustatory sensations as functional. According to leading copyright authority Melville Nimmer, the notion that recipes can be copyrighted "seems doubtful because the content of recipes are clearly dictated by functional considerations, and therefore may be said to lack the required element of originality, even though the combination of ingredients contained in the recipes may be original in a noncopyright sense."[131] In the most extensive discussion of the copyrightability of recipes by any court, the Seventh Circuit in *Meredith Corp.* relied on Nimmer's analysis in vacating the district court's finding of infringement of a cookbook *Discover Dannon.*[132] Although the

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125 *See* Kal Raustiala & Christopher Sprigman, *The Piracy Paradox: Innovation and Intellectual Property in Fashion Design*, 92 VA. L. REV. 1687, 1699 (2006).

126 *See, e.g.*, Ergonomically Engineered Underwear, U.S. Patent No. 5,157,793 (filed Sept. 26, 1991); Soft Durable Nonwoven Fabric, U.S. Patent No. 2,823,142 (filed Oct. 20, 1954).

127 *See* Apple Computer, Inc. v. Microsoft Corp., 35 F.3d 1435, 1445 (9th Cir. 1994) ("Design alternatives are further limited by the GUI's purpose of making interaction between the user and the computer more 'user-friendly.' These, and similar environmental and ergonomic factors which limit the range of possible expression in GUIs, properly inform the scope of copyright protection.").

128 One wonders how copyright law would treat Aldous Huxley's "Feelies." *See* HUXLEY, *supra* note 1.

129 17 U.S.C. § 102(a) (2006).

130 *See* Buccafusco, *supra* note 25, at 1127–30 (discussing lack of copyright protection for recipes). For a discussion of the copyrightability of smell, see generally Charles Cronin, *Genius in a Bottle: Perfume, Copyright, and Human Perception*, 56 J. COPYRIGHT SOC'Y U.S.A., 427, 482–83 (2009), concluding that copyright protection should be limited to works perceived through sight and hearing.

131 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 2.18[I] (2011) (footnote omitted).

132 *See* Publ'ns Int'l, Ltd. v. Meredith Corp., 88 F.3d 473, 481–82 (7th Cir. 1996).

court withheld judgment on whether recipes are "*per se* amenable to copyright protection," it concluded:

> The recipes involved in this case comprise the lists of required ingredients and the directions for combining them to achieve the final products. The recipes contain no expressive elaboration upon either of these functional components, as opposed to recipes that might spice up functional directives by weaving in creative narrative.[133]

The court stated that dishes like "Curried Turkey and Peanut Salad" and "Swiss 'n' Cheddar Cheeseball[s]" did not manifest "even a bare modicum of the creative expression—that is, the originality—that is the '*sine qua non* of copyright.'"[134] Agreeing with Nimmer, the Seventh Circuit in *Meredith Corp.* held that the recipes were either statements of preexisting facts (i.e., "the ingredients necessary to the preparation of a particular dish") or procedures or processes, which are excluded from copyright protection by section 102(b) of the Copyright Act.[135]

Interestingly, the *Meredith Corp.* court did soften its ruling that recipes are not copyrightable. The court conceded that some portions of recipes may be copyrightable to the extent that their "authors lace their directions for producing dishes with musings about the spiritual nature of cooking or reminiscences they associate with the wafting odors of certain dishes in various stages of preparation."[136] The court effectively suggests that while gustatory expression is functional and thus noncopyrightable, the inclusion of literary or visual expression in a recipe qualifies for protection.

2. *Patenting Sight*

Just as the pleasures of touch and taste are considered inappropriate for copyright law, visual pleasure can create problems for patent law. While patent law embraces functionality, attempts to patent visual pleasure trigger the same jurisprudential alarms that blare when an author tries to copyright tactile pleasure. In addition, patent law has developed its own method for dealing with products that incorporate both visually pleasing and functional features—design patent law. Commentators consider design patent law, like its copyright-law cousin the useful articles doctrine, to be hopelessly confused.

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133 *Id.* at 480.

134 *Id.* at 476, 482 (quoting Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991)). The court conflates the standards of originality and minimal creativity. Copyrightable work must be original to the author (i.e., not copied) and demonstrate some modicum of creative spark. *See Feist*, 499 U.S. at 345.

135 *See Meredith Corp.*, 88 F.3d at 480, 482.

136 *Id.* at 481.

This confusion arises in large part from the law's attempt to analyze visual sensation using doctrinal tools developed for issues associated with utility. For example, *Datamize, LLC v. Plumtree Software, Inc.* involved alleged infringement of a patent for a program that allowed a user to create "aesthetically pleasing" electronic-kiosk interfaces.[137] The defendant argued that the patent claim was indefinite because "aesthetically pleasing" did not provide sufficient notice of the claimed invention's scope.[138] The plaintiff suggested that "aesthetically pleasing" meant a claimed invention is only attractive to the person using the product, but the Federal Circuit refused this interpretation.[139] The court noted that "aesthetically pleasing" meant "having beauty that gives pleasure or enjoyment," and the court was concerned that different standards of beauty would lead to unrestrained constructions of the claim's scope.[140] The Federal Circuit wrote:

> A purely subjective construction of "aesthetically pleasing" would not notify the public of the patentee's right to exclude since the meaning of the claim language would depend on the unpredictable vagaries of any one person's opinion of the aesthetics of interface screens. While beauty is in the eye of the beholder, a claim term, to be definite, requires an objective anchor.[141]

The plaintiff tried to provide an "objective anchor" by listing generally accepted parameters of good design—including symmetry, consistency, predictability, simplicity, and cleanliness—but the court found little solace in these constraints.[142] The parameters did not dictate how symmetry or consistency should be evaluated or weighed to determine whether any given incarnation of a product would fall within the patent's scope.[143] Accordingly, the court found the patent claim's language indefinite and declared the patent invalid.[144]

The court's anxiety about the subjectivity of visual pleasure stands in contrast to patent law's acceptance of tactile and gustatory pleasure. Patent courts do not usually find terms referring to touch or taste, such as "comfortably" or "smoky flavor," indefinite. Such concepts, however, seem no more amenable to mathematical precision than visual pleasure.

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137 *See* 417 F.3d 1342, 1345 (Fed. Cir. 2005).
138 *See id.*
139 *See id.* at 1349–50.
140 *See id.* at 1348, 1350.
141 *Id.* at 1350.
142 *See id.* at 1353–54.
143 *See id.* at 1354.
144 *See id.* at 1356.

Patent law most directly confronts the sense of sight in the field of design patent law.[145] Unlike utility patents, which protect useful aspects of products and processes, design patents protect the ornamental designs of useful articles.[146] As the Supreme Court explained in 1871, the design patent statutes are "plainly intended to give encouragement to the decorative arts. They contemplate not so much utility as appearance, and that, not an abstract impression, or picture, but an aspect given to those objects mentioned in the acts."[147] Design patents aim to fill the gap between utility patents and copyrights.[148] In fulfilling this intention, however, design patents have created considerable confusion and unhappiness among courts and commentators.[149] The anxiety that design patent law has generated seems to come from patent judges' discomfort with deciding questions of visual aesthetics.

Congress first provided patent protection for designs in 1842.[150] The act established a seven-year term of protection for "any new and original design for a manufacture."[151] In *Gorham Co.*, the Supreme Court clarified that Congress aimed to encourage the creation of visually attractive articles of manufacture.[152] The Court wrote: "The law manifestly contemplates that giving certain new and original appearances to a manufactured article may enhance its salable value, may

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145 *See* 35 U.S.C. § 171 (2006) ("Whoever invents any new, original and ornamental design for an article of manufacture may obtain a patent therefor, subject to the conditions and requirements of this title.").

146 *See* 8 CHISUM, *supra* note 86, § 23.01.

147 Gorham Co. v. White, 81 U.S. (9 Wall.) 511, 524–25 (1871).

148 According to the Commissioner of Patents in 1902,

> [T]he subject of design patents will occupy its proper philosophical position in the field of intellectual production, having upon the one side of it the statute providing protection to mechanical constructions, possessing utility of mechanical function, and upon the other side the copyright law, where objects of art are protected, reserving to itself the position of protecting objects of new and artistic quality pertaining, however, to commerce, but not justifying their existence upon functional utility.

WILLIAM L. SYMONS, THE LAW OF PATENTS FOR DESIGNS 12 (1914).

149 *See, e.g.*, 1 JAMES LOVE HOPKINS, THE LAW OF PATENTS AND PATENT PRACTICE IN THE PATENT OFFICE AND THE FEDERAL COURTS WITH RULES AND FORMS, § 58, at 108–09 (1911) ("The protection of designs by Letters Patent is of very doubtful propriety. The characteristics of a patentable design always bring it, or should bring it, within the scope of the copyright act."); Perry J. Saidman, *Functionality and Design Patent Validity and Infringement*, 91 J. PAT. & TRADEMARK OFF. SOC'Y 313, 314 (2009) ("Confusion and uncertainty surrounding the issue of functionality has plagued design patent law for some time . . . .").

150 Act of Aug. 29, 1842, ch. 263, § 3, 5 Stat. 543, 543–44. For a history of design patent law, see generally Jason J. Du Mont, *A Non-Obvious Design: Reexamining the Origins of the Design Patent Standard*, 45 GONZ. L. REV. 531 (2010) (reviewing the actions of early commissioners and the Supreme Court in interpreting the design patent statute).

151 § 3, 5 Stat. at 543–44. The Act specified various products that were eligible for design patent protection, including metal materials, fabric designs, busts, statues, and other ornaments attached to articles of manufacture. *See id.*

152 *Gorham Co.*, 81 U.S. at 525.

enlarge the demand for it, and may be a meritorious service to the public."[153] Thus, when determining the patentability of an object, patent examiners and courts should inquire not into the object's utility but rather its ability to confer visual pleasure. The statute had included the word "useful" in its description of design patent subject matter, but this did not carry the same meaning as in the utility patent sense.[154] As the court in *Rowe v. Blodgett & Clapp Co.* explained, "The question an examiner asks himself while investigating a device for a design patent is not 'What will it do?' but 'How does it look?' 'What new effect does it produce upon the eye?' The term 'useful,' in relation to designs, means adaptation to producing pleasant emotions."[155] The court also noted, "Their object is to encourage works of art and decoration which appeal to the eye, to the aesthetic emotions, to the beautiful."[156]

In 1902, Congress amended the design patent act to cover "any new, original, and ornamental design" to make explicit the visual character of design patent subject matter.[157] Ornamentality now became a subject-matter limitation on the availability of a design patent, and it defined the patent's scope. Accordingly, courts increasingly had to determine whether a given design was ornamental and whether another design infringed its ornamental features. In doing so, courts generally followed *Rowe*'s suggestion to identify features that appealed to the emotions or the aesthetic sense. For example, in 1928, the D.C. Circuit noted that while people derive pleasure from both useful and ornamental objects, the nature of that pleasure is different:

> A thing may be useful and ornamental, and may please, both because of the purpose for which it was made and because of its beauty. That which is utilitarian, however, pleases because it meets the approval of reason, while that which is ornamental gratifies the senses, without reasoning out the why or the wherefore.[158]

The court subsequently held that the plaintiff's rivet-setting machine was "lacking in symmetry, wanting in grace, and destitute of any appeal to the senses or emotions," and thus unpatentable.[159] To appeal

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153 *Id.*

154 *See* 8 CHISUM, *supra* note 86, § 23.02.

155 Rowe v. Blodgett & Clapp Co., 112 F. 61, 62 (2d Cir. 1901) (quoting Rowe v. Blodgett & Clapp Co., 103 F. 873, 874 (D. Conn. 1900)).

156 *Id.*

157 Act of May 9, 1902, ch. 783, 32 Stat. 193, 193; *see* SYMONS, *supra* note 148, at 13–14.

158 *In re* Stimpson, 24 F.2d 1012, 1012 (D.C. Cir. 1928).

159 *Id.*; *see also* Bliss v. Gotham Indus., Inc., 316 F.2d 848, 850 (9th Cir. 1963) ("Plaintiff's pitcher has no particularly aesthetic appeal in line, form, color, or otherwise. It contained no dominant artistic motif either in detail or in its overall conception. . . . The reaction which the pitcher inspires is simply that of the usual, useful and not unattractive piece of kitchenware."); Design, Inc. v. Emerson Co., 319 F. Supp. 8, 11 (S.D. Tex. 1970)

to the aesthetic sense or the emotions of a viewer, however, an object need not belong to the fine arts. According to one court, Congress "had in mind the elimination of much of the unsightly repulsiveness that characterizes many machines and mechanical devices which have a tendency to depress rather than excite the esthetic sense."[160] Accordingly, the court found the design of a cement mixer to be a potentially appropriate subject for a design patent.[161]

Throughout the better part of the twentieth century, courts in design patent cases routinely scrutinized products for any indication that their design appealed to the eye or excited the aesthetic senses or emotions.[162] In the last decade of the century, however, courts appear to have gotten increasingly uncomfortable with the "largely subjective" nature of these inquiries.[163] In 1989, the Supreme Court declared that, to qualify for design protection, "a design must present an aesthetically pleasing appearance that is not dictated by function alone, and must satisfy the other criteria of patentability."[164] Over the next several years, courts relied on this definition, but only selectively. Rather than specifically examining the aesthetic merits of a design, courts focused on lack of functionality as a proxy for aesthetic merit.[165] Thus, one court has noted that "[w]hen there are several ways to achieve the function of an article of manufacture, the design of the article is more likely to serve a primarily ornamental purpose."[166] Judge Pauline Newman was explicit about the reason for the change: "Recognizing that ornamentation is in the eye of the beholder, the courts have sought a more objective standard in the general rule that a design is 'ornamental' for purposes of 35 U.S.C. § 171 when it is not primarily functional."[167]

("There is nothing either artistic or aesthetic about it. One who sees it does not take delight in its creation.").

160 *In re* Koehring, 17 C.C.P.A. 774, 776 (1930).

161 *Id.* at 779.

162 *See, e.g.*, Flexible Plastics Corp. v. Black Mountain Spring Water Inc., 357 F. Supp. 554, 555–56 (N.D. Cal. 1972) ("It is perhaps an understatement to say that it is not a thing of beauty—it has not the slightest appeal to the aesthetic sense.").

163 *See, e.g.*, Schwinn Bicycle Co. v. Goodyear Tire & Rubber Co., 444 F.2d 295, 299 (9th Cir. 1970) (rejecting potential design patent on the grounds that the design was obvious within the meaning of patent law).

164 Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 148 (1989).

165 *See* Perry J. Saidman & John M. Hintz, *The Doctrine of Functionality in Design Patent Cases*, 19 U. BALT. L. Rev. 352, 352 (1989) ("The term 'functionality' is not used in the patent statute with respect to designs. Nevertheless, courts have read into the statute the requirement that designs be nonfunctional as the converse of the statutory requirement of ornamentality.").

166 L.A. Gear, Inc. v. Thom McAn Shoe Co., 988 F.2d 1117, 1123 (Fed. Cir. 1993).

167 Best Lock Corp. v. Ilco Unican Corp., 94 F.3d 1563, 1567 (Fed. Cir. 1996) (Newman, J., dissenting); *see also* Saidman, *supra* note 149, at 317 ("If the function of the overall claimed design can be performed by other designs, then the design patent *ipso facto* is not monopolizing that function and the claimed design is not *de jure* functional.").

Interestingly, the analytical change in design patent doctrine coincides fairly closely with the creation in 1982 of the Federal Circuit Court of Appeals as a specialist, quasi-technical court to hear patent appeals. Perhaps these technophile judges are particularly anxious about the "subjective" nature of visual pleasure. This change is potentially problematic. The existence of alternative designs does not necessarily mean that any given alternative is ornamental. In its anxiety about visual aesthetics, the Federal Circuit has effectively read out of the statute any affirmative requirement that the patentee's design contain aesthetic ornamental features.

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This Part has argued that IP law establishes a dichotomy in its treatment of the human senses. Copyright law has isolated works appealing to the senses of sight and hearing as its unique province, leaving patent law with products that appeal to touch, taste, and smell as well as other material and useful arts. This account helps resolve ambiguities in IP doctrine. Copyright's treatment of paintings as nonfunctional and KOOSH balls and food as functional is explicable in light of the different senses to which those works appeal. Similarly, the courts' differential anxiety about the subjectivity of visual pleasure compared with tactile or gustatory pleasure is consistent with the claim that the latter two seem more appropriate for patent law's sensory "container."

II
THE SENSORY DICHOTOMY AS HIERARCHY

Perhaps the most profound and lasting contribution of the critical movement in humanities and social sciences scholarship is the recognition that differences almost invariably lead to hierarchies.[168] Where society makes distinctions between two classes of people, objects, or ideas, it will view one of them as better, nobler, or purer than the other. In more familiar terms, separate is never equal. Recent research on the history of aesthetic theory has shown this to be the case for the senses as well. From the ancient Greeks to modernist art critics, authorities have uniformly ranked sight and hearing above touch, taste, and smell.

Traditionally, scholars view sight and hearing as "high" senses and touch, taste, and smell as "low" senses.[169] While the high senses are capable of artistic expression, the low senses are confined to mere utility. Accordingly, the pleasures of the high senses are nonfunc-

168 *See* FOUCAULT, *supra* note 20, at 145; JORDAN, *supra* note 20, at 253.

169 *See infra* Part II.A.

tional and may exhibit unconstrained expression. The low senses, constrained by functional necessity, tend to be limited by natural and biological predispositions, while the pleasures of the high senses will ultimately take different forms in different cultures.

In different contexts, Alfred Yen and Anne Barron have shown that copyright doctrine closely tracks major aesthetic theories.[170] This Part argues that this view holds true for IP's treatment of the senses as well. Explicitly or implicitly, IP law mimics the sensory hierarchy of Western aesthetic theory. Moreover, this hierarchy has been made to justify the doctrinal distinction separating visual and auditory pleasure from tactile, gustatory, and olfactory pleasure.

A. The Sensory Hierarchy in Aesthetic Theory

Since the time of the ancient Greek philosophers, sight and sound have been distinguished from touch, taste, and smell on many grounds, and in each case sight and sound have been found to involve better, nobler, and purer experiences. Philosophers have used a number of related and overlapping distinctions between the high and low senses to justify this hierarchy.

The earliest criticisms of the low senses involved their seemingly intimate relationship with bodily needs and desires. For Kant, aesthetic experience required disinterested contemplation of beauty, but the low senses were inherently interested in the survival of the individual.[171] Unlike sight and sound, which could remain detached from "practical biological interests," Kant could not trust that touch, taste, and smell could care about anything other than the essential needs of the organism.[172] Thus, the low senses could not divorce themselves from mundane tasks for long enough to cultivate them.

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170 *See* Barron, *supra* note 48, at 370–71 ("[T]here are clear affinities between the way U.K. copyright law dissects the genus 'work' for the purpose of delineating the possible objects of a *property* right, and a tradition of thinking about the arts . . . in which the separate arts are distinguished from each other, and the essential components of each art carefully dissected, for the purpose of identifying their *aesthetic* limits and possibilities."); Alfred C. Yen, *Copyright Opinions and Aesthetic Theory*, 71 S. CAL. L. REV. 247, 250 (1998) ("[T]he analytical premises of copyright opinions are practically identical to those of major aesthetic theories.").

171 *See* Nancy E. Aiken, *An Evolutionary Perspective on the Nature of Art*, 2 BULL. PSYCHOL. & ARTS 3, 4 (2001) ("In Kant's effort to sort out the components of aesthetic response, he noted that this pleasure which art evokes does not seem to have anything to do with any interest in the objects depicted in paintings. . . . Kant called this aspect of aesthetic response 'disinterest' which his followers construed to mean that since art does not interest people for any utilitarian reason, it must have not [sic] utilitarian value.").

172 *See* Frances W. Herring, *Touch—The Neglected Sense: An Inquiry into the Reasons for Our Comparative Failure to Create and Enjoy Tactile Art Forms*, 7 J. AESTHETICS & ART CRITICISM 199, 200 (1949) (quoting IRWIN EDMAN, THE WORLD, THE ARTS AND THE ARTIST 24 (1928)); *see also* DUTTON, *supra* note 22, at 104 ("The opposite of disinterested contemplation for Kant occurs when we have an interest in the existence of an object of experience, particularly when the pleasure we receive from the object satisfies a personal desire. In order for us to

Not only were the low senses incapable of disinterested appreciation of aesthetic beauty, they were also inferior with respect to the formal principles upon which aesthetic experience is based. Visual and aural stimuli are external to the body, allowing multiple people simultaneous access to them. For the low senses to interact with stimuli, however, the stimuli need to be in more or less direct contact with the body. Accordingly, the experiences of the low senses were inherently private and incommunicable.[173] Moreover, the low senses seemed to lack the degree of discrimination necessary for aesthetic experience.[174] Sight and sound exhibit natural principles for organizing communication based on line, color, scale, and tone. Touch, taste, and smell were thought to lack such principles, thereby eliminating the possibility of communicating deep cultural meaning through them.

B. The Sensory Hierarchy in IP Doctrine

IP's sensory dichotomy mimics the hierarchy of the senses that has dominated the Western aesthetic tradition for two millennia. Occasionally explicitly but more often implicitly, IP law distinguishes between the high senses and the low senses with regard to their capacity for aesthetics, their functionality, their constraints, and their subjectivity. This hierarchy legitimates IP law's differential treatment of the high and low senses: because touch, taste, and smell are nonaesthetic, functional, and constrained, they do not merit copyright protection.

Perhaps the most obvious distinction between copyright and patent law is the divide between the aesthetic and the utilitarian.[175] Copyright law reflects the modernist notion that beauty is superfluous and that art should be made solely for art's sake.[176] We enjoy visual and

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take pleasure in a meal, his argument goes, the food must actually exist and assuage our actual hunger. Imagined food will never satisfy a real hunger.").

173 *See* Herring, *supra* note 172, at 201.

174 *See id.*

175 This contrast is also apparent in the distinction between design and utility patent law. *See In re* Stimpson, 24 F.2d 1012, 1012 (D.C. Cir. 1928) ("A thing may be useful and ornamental, and may please, both because of the purpose for which it was made and because of its beauty. That which is utilitarian, however, pleases because it meets the approval of reason, while that which is ornamental gratifies the senses, without reasoning out the why or the wherefore.").

176 *See* Afori, *supra* note 44, at 1110–11 ("In the twentieth century there were further developments in conceptualizing designs, as art and industry merged, and the designer began to be seen as an artist in his own right. In response, social definitions strengthened the differentiation between implicitly lower-class artisans and implicitly upper-class artists, with the former in charge of utility and the latter in control of beauty, or art for art's sake. Oscar Wilde captured this insight by stating: '[a]ll art is quite useless.'"); Aiken, *supra* note 171, at 3 ("Historically, most aestheticians have regarded art as superfluous, as icing on the cake of culture."); J.H. Reichman, *Design Protection in Domestic and Foreign Copyright Law: From the Berne Revision of 1948 to the Copyright Act of 1976*, 1983 DUKE L.J. 1143, 1153.

aural stimuli merely for the pleasure involved in contemplating the beautiful and sublime. Touch, taste, and smell, however, respond only to the functional requirements of the body. Their satisfaction is only useful, never aesthetic. Accordingly, they are appropriate for patent protection.

The distinction between the aesthetic and utilitarian is most apparent in copyright law's treatment of useful articles, especially those that include appeals to the senses of touch, taste, and smell. In cases like *OddzOn Products* and *Meredith Corp.*, the courts treated the tactile feel of the KOOSH ball and the taste of dishes as functional components of the works, which must be separable from any aesthetic features before copyright protection attaches.[177] By contrast, in *Gay Toys* the court explicitly distinguished the visual pleasure of contemplating a painting from the intrinsic utilitarian function of industrial products, writing, "Other than the portrayal of a real airplane, a toy airplane, like a painting, has no intrinsic utilitarian function."[178] The court denied the argument that viewing a toy or painting could function to inspire the viewer's imagination.[179] This implies that, unlike tactile or gustatory pleasure, visual pleasure is per se nonfunctional.

The functionality of tactile pleasure in IP doctrine is implicit in Judge Posner's treatment of the sex aids in *Ritchie*.[180] Judge Posner noted that the plaintiff's products are "colloquially referred to as 'sex toys,'" but he resisted this characterization.[181] Judge Posner preferred the "more perspicuous term . . . 'sexual devices,' by analogy to 'medical devices.'"[182] The analogy is telling: by its implied logic, sexual devices, like medical devices, are useful and thus patentable. They manipulate the body in certain useful ways. This rhetorical move helps elide the pleasurable characteristics of the products. Moreover, had Judge Posner characterized the products as sex toys, the rule in *Gay Toys* that toys are not useful articles would have been relevant.[183] By characterizing them as sexual devices, the opinion implicitly distinguishes between the functional, tactile pleasure of sex aids and the aesthetic visual pleasure of traditional toys.

The low senses are constrained by the objective, biological properties of humans because they must meet the functional demands

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177 *See* Publ'ns Int'l, Ltd. v. Meredith Corp., 88 F.3d 473, 481 (7th Cir. 1996); OddzOn Prods., Inc. v. Oman, 924 F.2d 346, 347 (D.C. Cir. 1991).

178 Gay Toys, Inc. v. Buddy L Corp., 703 F.2d 970, 973 (6th Cir. 1983); *see also* 17 U.S.C. § 101 (2006) (defining a useful article as "an article having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information").

179 *See Gay Toys*, 703 F.2d at 973.

180 Ritchie v. Vast Res., Inc., 563 F.3d 1334, 1336–38 (Fed. Cir. 2009).

181 *See id.* at 1335.

182 *Id.*

183 *See Gay Toys*, 703 F.2d at 973.

of the body. The pleasures of the high senses, by contrast, need not comply with such limitations. Accordingly, they are unconstrained and subjective, allowing the free expression of culture.[184] The relationship between constraint and function is evident in copyright law's separability analysis. Courts faced with the task of separating the aesthetic from the functional often turn to the existence of constraints on the designer on the assumption that, unlike functional features, aesthetic features of a product are unconstrained.[185] In addition, copyright law embraces the subjectivity of aesthetics, often asking jurors to judge the "aesthetic appeal"[186] of a work's "total concept and feel."[187] As *Datamize* demonstrates, utility patent law excludes the subjectivity of visual aesthetics and requires the existence of "[s]ome objective standard" within which the work can be constrained.[188] Moreover, design patent jurisprudence has essentially reduced the distinction between aesthetic and functional design into a question about constraints on the designer. If the designer has choices, they are deemed aesthetic.[189]

These examples illustrate the role the sensory hierarchy plays in distinguishing copyrightable and patentable subject matter. IP law recapitulates the qualitative distinction between the high senses and low senses with respect to their aesthetic capacities and limitations. Appeals to the senses of touch, taste, and smell are excluded from copyright protection because they are merely functional and nonaesthetic.

III
CHALLENGING THE SENSORY DICHOTOMY

Like much in the history of philosophy, the sensory hierarchy does not necessarily reflect fundamental truths about the capacities of the senses for aesthetic experience. Fortunately, recent research in the social sciences sheds new light on this issue. The qualitative distinction between the high and low senses cannot be maintained. Vis-

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184 *See* DUTTON, *supra* note 22, at 204 ("Culture, however, was completely different. It was a realm of free creativity that engraved itself on a mental blank slate: culture was the uncontested domain of the humanities, untouched by biology.").

185 *See, e.g.*, Pivot Point Int'l, Inc. v. Charlene Prods., Inc., 372 F.3d 913, 931–32 (7th Cir. 2004) ("[T]here is no evidence that Heerlein's artistic judgment was constrained by functional considerations.").

186 *See* Boisson v. Banian, Ltd., 273 F.3d 262, 272–73 (2d Cir. 2001).

187 *See* Cavalier v. Random House, Inc., 297 F.3d 815, 822 (9th Cir. 2002) (deciding a motion for summary judgment based on whether the jury would reasonably be able to make a "subjective comparison" about whether two works were "substantially similar in . . . 'total concept and feel'") (quoting Kouf v. Walt Disney Pictures & Television, 16 F.3d 1042, 1045 (9th Cir. 1994)).

188 *See* Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1350 (Fed. Cir. 2005).

189 For more on functionality in design patent law, see *supra* notes 164–67 and accompanying text.

ual and aural expression are not as nonfunctional and unconstrained as previously thought, nor are touch, taste, or smell as devoid of expressive capacity. Developments in the emerging field of evolutionary aesthetics are tapping into capacities and limits of the aesthetic experience. Also, developments in haptic technology and studies of cuisine show how the low senses are capable of expressing ideas and emotions in many of the same ways as the high senses. This Part reviews this research.

A. The Limits of the "High" Senses

The claims that the pleasures of the high senses are nonfunctional and unconstrained are the principal distinctions that justify the sensory hierarchy. Therefore, art exists solely for art's sake, and it will take whatever form a given culture imposes on it. Scholars in the emerging field of evolutionary aesthetics are beginning to undermine the strong form of both of these claims. For example, some aesthetic preferences are the result of evolutionary forces that favored humans with such preferences. Moreover, evolution had to select those preferences that promoted fitness in the environment in which early humans evolved.

Evolutionary aesthetics, and evolutionary psychology more broadly, starts with the recognition that the mind is a system designed by natural selection to solve the kinds of problems that confronted our prehistoric ancestors in the Pleistocene era (2.5 million to 12,000 years ago).[190] Just as the physical features of organisms have evolved through millennia of natural selection, so have aspects of the mind. Features of the human mind that conferred survival advantages on individuals exhibiting them were selected for and would tend to appear in higher proportion in subsequent generations. In the same way that walking upright increased the likelihood that those individuals would survive, so did an ability to visually recognize the pattern of a potentially deadly snake.

While the scientific community overwhelmingly accepts that physical features of the human body have evolved, the notion that aspects of the mind—and especially aesthetic preferences—have evolutionary histories has received less resounding support. While aesthetic preferences seem to be the preserve of unconstrained cultural expression, new research suggests that our attraction to Britney Spears and Vincent Van Gogh may have as much to do with evolution as our preferences for bacon and chocolate cake.[191] As two of the leading evolutionary psychologists write, "the human mind is permeated by an

190 *See* STEVEN PINKER, HOW THE MIND WORKS 21 (1997).

191 David Hume suggested as much in the eighteenth century: "Sweet and bitter, Hume continues, are 'bodily tastes' that refer to subjective experience. In this they are

additional layer of adaptations that were selected to involve humans in aesthetic experiences and imagined worlds, even though these activities superficially appear to be nonfunctional and even extravagantly nonutilitarian."[192] This is not to deny any role for culture in shaping our aesthetic preferences, but culture cannot give us a preference for just anything. According to Denis Dutton, "Human nature, so evolutionary aesthetics insists, sets limits on what culture and the arts can accomplish with the human personality and its tastes."[193]

Understanding the principle that natural selection has shaped some of our aesthetic preferences is one thing; determining which of those preferences exhibit the stamp of evolution is quite another. Culture is powerful, and it has obscured many features of our evolutionary history. To control for the effects of culture, evolutionary psychologists look for evidence that a behavior is more or less universal among humans, stereotyped within the species, and detectable in subjects that have not been exposed to cultural influences (usually infants and children).[194] These techniques reveal aesthetic preferences that bear the hallmarks of natural selection. As Donald Symons writes, "Beauty [i]s in the [a]daptations of the [b]eholder."[195]

1. *Vision*

Studies of humans' visual preferences suggest that some aspects of the things pleasing to the eye are the products of evolutionary adaptations that enhanced the survival of our ancestors' genes.[196] For the great expanse of human prehistory, our species lived in savannas characterized by grasslands and low trees. Accordingly, evolutionary aesthetics would predict that humans may have evolved preferences for the visual features of high quality savanna landscape that promise the richest resources in terms of food, water, and shelter.[197] The results of various experiments support this hypothesis. In one crosscultural study, people from different countries viewed photographs of various kinds of trees. Regardless of the trees native to their homeland, they consistently preferred broad, spreading trees with trunks

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qualities not unlike the 'mental tastes' of beauty and ugliness." DUTTON, *supra* note 22, at 37.

192 *See* John Tooby & Leda Cosmides, *Does Beauty Build Adapted Minds? Toward an Evolutionary Theory of Aesthetics, Fiction and the Arts*, 94/95 SUBSTANCE 6, 11 (2001).

193 DUTTON, *supra* note 22, at 206.

194 *See* Aiken, *supra* note 171, at 4.

195 Donald Symons, *Beauty Is in the Adaptations of the Beholder: The Evolutionary Psychology of Human Female Sexual Attractiveness*, *in* SEXUAL NATURE SEXUAL CULTURE 80, 80 (Paul R. Abramson & Steven D. Pinkerton eds., 1995).

196 *See* STEVEN PINKER, THE BLANK SLATE: THE MODERN DENIAL OF HUMAN NATURE 405 (2002).

197 *See* Gordon H. Orians, *An Evolutionary Perspective on Aesthetics*, 2 BULL. PSYCHOL. & ARTS 25, 27 (2001).

that bifurcate close to the ground over conical or columnar trees. The investigators suggest that this preference reflects the kinds of trees in the African savanna that provided the highest-quality resources.[198]

Another study surveyed people in different countries around the world about their preferences for visual art.[199] The survey asked for the kinds of paintings the participants liked to look at and their favorite colors, subjects, and styles of painting. It also asked what kinds of things participants did not enjoy seeing. If the strong cultural model of aesthetic preferences were correct, the desires of people should diverge considerably and reflect their different cultures. In fact, the crosscultural similarity was overwhelming. According to Dutton:

> People in almost all nations disliked abstract designs, especially jagged shapes created with a thick impasto in the commonly despised colors of gold, orange, yellow, and teal. This cross-cultural similarity of negative opinion was matched on the positive side by another remarkable uniformity of sentiment: almost without exception, the most-wanted painting was a landscape with water, people, and animals.[200]

The highest color preferences were for blue and green. These preferences match what evolutionary aesthetics would predict: people get the most pleasure out of images that mimic environmental features such as food, water, and shelter, which provide survival advantages.

Similar findings emerge with respect to preferences for the physical beauty of people. Crosscultural studies exhibit surprisingly high correlations in interpersonal ratings of facial attractiveness.[201] Researchers also argue that people consistently prefer symmetrical faces that are free of blemishes.[202] Moreover, even six-month-old infants can distinguish attractive from unattractive faces, and they prefer attractive faces of diverse types.[203] The preferred features are thought to signify potential mates' genetic qualities, because asymmetries and blemishes are related to genetic disorders.

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198 *See id.* at 27–28; *see also* DUTTON, *supra* note 22, at 22 (describing a study showing people of different ages photos of different landscapes in which "[t]he most striking finding was in the youngest group: eight-year-olds preferred savannas for both living and visiting above all the other age groups").

199 *See* DUTTON, *supra* note 22, at 13.

200 *Id.* at 14.

201 *See* Judith H. Langlois et al., *Facial Diversity and Infant Preferences for Attractive Faces*, 27 DEVELOPMENTAL PSYCHOL. 79, 82 (1991).

202 *See* Symons, *supra* note 195, at 81, 97.

203 Langlois et al., *supra* note 201, at 82.

2. *Music*

Music does not typically refer to or represent objects in the world, and it ostensibly has no utilitarian value. Accordingly, it seems to offer the ideal medium for unconstrained cultural expression.[204] Nonetheless, research on infants' musical preferences suggests that the effects of evolution may determine some features of the world's musical systems. For example, a number of studies have shown that infants exhibit preferences for consonance over dissonance and for simple frequency ratios of tones well before the first birthday.[205] Scientists speculate that these preferences may reflect the ease with which consonance is processed mentally and the similarity of simple frequency ratios to the structure of human speech.[206] According to Sandra Trehub, these and similar studies "imply that infants are universalists in the sense that they are perceptually equipped for the music of any culture. The cultural relativism and skepticism about musical universals that prevailed for several years among ethnomusicologists is undergoing considerable change."[207]

3. *Narrative*

Literary works also seem to exhibit characteristics that suggest the influence of evolved preferences. Throughout history and across cultures, people tell stories,[208] and those stories share strong resemblances in form and content. The resemblances suggest that both the structure and content of narratives reflect adaptive advantages passed down through the generations. For example, stories help organize

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204 According to two researchers, "the prevailing view is that the special status of tones related by simple frequency ratios stems largely from exposure to a particular musical culture or style and is, therefore, a reflection of musical consonance." E. Glenn Schellenberg & Sandra E. Trehub, *Natural Musical Intervals: Evidence from Infant Listeners*, 7 PSYCHOL. SCI. 272, 272 (1996) (citations omitted).

205 *See* Laurel J. Trainor & Becky M. Heinmiller, *The Development of Evaluative Responses to Music: Infants Prefer to Listen to Consonance Over Dissonance*, 21 INFANT BEHAV. & DEV. 77, 85 (1998); Schellenberg & Trehub, *supra* note 204, at 276.

206 *See* Schellenberg & Trehub, *supra* note 204, at 276.

207 Sandra E. Trehub, *The Developmental Origins of Musicality*, 6 NATURE NEUROSCIENCE 669, 670 (2003). At least one court has recognized that some musical compositions are more generally pleasing while others are not. According to Judge Learned Hand, "It must be remembered that, while there are an enormous number of possible permutations of the musical notes of the scale, only a few are pleasing; and much fewer still suit the infantile demands of the popular ear." Darrell v. Joe Morris Music Co., 113 F.2d 80, 80, 80 (2d. Cir. 1940).

208 *See* Tooby & Cosmides, *supra* note 192, at 7 ("Involvement in fictional, imagined worlds appears to be a cross-culturally universal, species-typical phenomenon.") (emphasis omitted). In addition, all normally developing humans acquire the ability to process and generate stories. Michelle Scalise Sugiyama, *Narrative Theory and Function: Why Evolution Matters*, 25 PHIL. & LITERATURE 233, 234 (2001).

information and share social norms.[209] Embodying information and norms in narrative makes them easier to process. As John Tooby and Leda Cosmides write, "stories are told in a way that mimics the format in which experienced events are mentally represented and stored in memory, in order to make them acceptable to the machinery the mind uses to extract meaning from experience."[210] The basic narrative structure of a chain of events in cause-and-effect relationships is likely easy to remember and use.[211]

In addition, the stories that people tell tend to be highly consistent despite different cultural contexts. One writer has studied narratives drawn from folktales of preliterate tribes, early epic poetry, novels, operas, and movies and has isolated seven plot templates that fit almost all stories.[212] As Steven Pinker suggests, fictional narratives provide us with a mental catalogue of the problems we are likely to face and the strategies that we could deploy.[213] Narratives simulate basic human goals and encode valuable environmental information about how to achieve them.[214] Thus, the ability to share stories would have provided adaptive advantages to individuals, enabling them to cope with typical human conflicts over love, power, and nature.[215]

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The traditional account of the aesthetic potential of the human senses insists that only sight and sound are capable of true artistic expression because unlike touch, taste, and smell, they may accommodate the unconstrained expression of cultural ideas and emotions. The low senses, on the other hand, are too dependent on natural, biological drives and dispositions to enable the free and disinterested expression that characterizes the high senses. Evolutionary aesthetics has undermined the idea that the pleasures of sight and sound are nonfunctional and unconstrained. Many human visual and auditory preferences appear to serve evolutionary ends and are limited by evolved tendencies. This is not to suggest that culture plays no role in shaping visual and auditory pleasures. Rather, it implies that this aspect of the sensory hierarchy is incorrect. Our preferences for sights and sounds are not meaningfully more nonfunctional or uncon-

209 *See* Michelle Scalise Sugiyama, *On the Origins of Narrative: Storyteller Bias as a Fitness-Enhancing Strategy*, 7 No. 4 HUM. NATURE 403, 412 (1996) ("Like gossip, stories are rich in social information: like gossiping, storytelling might have originated as an opportunistic response to the human need for social information.").

210 Tooby & Cosmides, *supra* note 192, at 24.

211 *See* Sugiyama, *supra* note 208, at 234.

212 *See* DUTTON, *supra* note 22, at 127.

213 *See* PINKER, *supra* note 190, at 543.

214 *See* Sugiyama, *supra* note 208, at 239.

215 *See* DUTTON, *supra* note 22, at 118.

strained than our preferences for a soft touch, a bite of cheeseburger, or the smell of bacon.

B. The Expressive Capacities of the "Low" Senses

1. *Tactile Communication*

As new research suggests the aesthetic limitations of the high senses, research on the sense of touch begins to show its capacity for intellectual and emotional communication.[216] Touch is the most developed sense at birth,[217] and the skin and its receptors make up the largest of our sensory organs.[218] Yet despite its importance to our inter- and intrapersonal lives, behavioral researchers have largely neglected touch.[219] This may be due in large part to the lack of a critical language for describing tactile sensations. Although we easily recognize the feelings associated with a loving caress or the twirl of dance, communicating these feelings to others linguistically can be difficult.[220] Advances in cultural anthropology and haptic technology are beginning to overcome these difficulties. Before describing this research, it is worth pointing out that although we tend to speak of "touch" as a single sense, it actually includes a number of distinct physical sensations, including tactility, muscular tension, movement, balance, temperature, and pain.[221]

One indication of the value we place on touch is the pervasiveness of tactile metaphors in linguistic communication. For example, we might describe someone as "coarse," "smooth," or "hard as nails," or we might speak of "weighty matters."[222] These tactile metaphors even extend into our way of speaking about aesthetic experience. A painting may be "balanced," and a good symphony declared "tight," while a bad one "plodding." Such phraseology provides emotional color for our language. In fact, emotions are described as "feelings" regardless of which sense they come from. Moreover, tactile metaphors may reflect fundamental structures of our mental architecture—an architecture in which early sensorimotor experiences

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216 *Cf.* DAVID HOWES, SENSUAL RELATIONS: ENGAGING THE SENSES IN CULTURE AND SOCIAL THEORY, at xii (2003) ("In the last few decades there has occurred a remarkable florescence of theoretically engaged (and engaging) work on the senses in a wide range of disciplines: from history and philosophy to geography and sociology, and from law and medicine to literature and art criticism.").

217 Matthew J. Hertenstein et al., *Touch Communicates Distinct Emotions*, 6 EMOTION 528, 528 (2006); Gallace & Spence, *supra* note 14, at 246.

218 Gallace & Spence, *supra* note 14, at 246.

219 *See* Joshua M. Ackerman et al., *Incidental Haptic Sensations Influence Social Judgments and Decisions*, 328 SCIENCE 1712, 1712 (2010).

220 *See* Mark Paterson, *Haptic Geographies: Ethnography, Haptic Knowledges and Sensous Dispositions*, 33 PROGRESS HUM. GEOGRAPHY 766, 766 (2009).

221 *Id.* at 768.

222 *See* Ackerman et al., *supra* note 219, at 1713.

generate a cognitive scaffold for organizing future conceptual knowledge and experience.[223]

In one recent experiment, scientists showed that unconscious tactile experiences can spill over into cognitive judgments and behaviors.[224] The researchers asked subjects to read a job applicant's résumé and rate the candidate's quality, seriousness about the job, and ability to get along with coworkers. Some subjects received a résumé on lightweight clipboards, while others were given heavy clipboards. Those given the heavy clipboards rated the applicant as significantly better and more serious, while their ratings of "ability to get along" were no different than that of the lightweight group. The researchers suggest that the tactile sensation of the heavy clipboard tapped into unconscious associations between weight and seriousness and importance. They conclude, "Our understanding of the world is not an abstract proposition but fundamentally depends on our multisensory experiences with it."[225]

To the extent that older behavioral research studied the sense of touch, it concluded that touch was incapable of communicating distinct emotions. At best, touch could add hedonic tone (positive or negative value) or intensity to other kinds of communications.[226] In many situations, it is difficult to isolate the role that touch plays from the effects of speech or facial gesture. Recent developments in haptic technologies—technologies that allow tactile communication at a distance—provide evidence to support the notion that touch can communicate distinct emotions.[227]

In one study, subjects were given a simple haptic device—basically a computer joystick that reproduces the sender's movements in the receiver's hands.[228] Senders were asked to communicate a series of distinct emotions by moving the joystick, and receivers were asked to interpret the emotions being conveyed. Receivers were able to recognize a number of distinct emotions at rates significantly higher than chance.[229] For example, participants typically expressed sadness using slow, steady, short movements and joy in long, jerky, and fast move-

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223 *See* Lawrence E. Williams et al., *The Scaffolded Mind: Higher Mental Processes Are Grounded in Early Experience of the Physical World*, 39 EUR. J. SOC. PSYCHOL. 1257, 1257, 1261–62 (2009).

224 *See* Ackerman et al., *supra* note 219, at 1713.

225 *Id.*

226 *See* Hertenstein et al., *supra* note 217.

227 *See* Alex Wright, *The Touchy Subject of Haptics*, COMM. ACM, Jan. 2011, at 20, 20–22 (2011) (describing new technologies that would allow more nuanced haptic interactions than those widely used currently).

228 *See* Jeremy N. Bailenson et al., *Virtual Interpersonal Touch: Expressing and Recognizing Emotions Through Haptic Devices*, 22 HUM.–COMPUTER INTERACTION 325, 333–36 (2007).

229 *Id.* at 342.

ments.[230] As these technologies improve and as people develop a "language" for tactile gestures, the quality and emotional depth of haptic communications will likely increase.

Traditional Western aesthetic theory excludes tactile pleasure from the realm of aesthetic communication based in large part on the assumption that touch is a communicatively weak sense. In light of the developments discussed above, this assumption appears increasingly untenable. Touch already plays an important aesthetic and communicative role in other populations. Chinese culture has a tradition of carving small objects designed to be carried in the pocket for the joy of handling them.[231] Furthermore, aesthetic experiences of touch among blind persons suggest "a keenness and wholeness of aesthetic delight as they approach art works through their fingers and hands, which those gifted with sight often seem to miss, and which those with sight might equally well receive."[232]

2. *Culinary Arts*

Increased academic attention to how food can carry cultural meaning matches the recent upswing in consumer interest in food and cooking. To whatever extent cooking received scholarly attention previously, it was assumed incapable of communicating ideas or feelings.[233] The best a cook could hope to do was make the necessary function of consumption a little more enjoyable. Recent research in the philosophy and anthropology of cuisine challenges this notion.[234] From elite chefs in Chicago and New York to families around the world, cooking is often a rich medium for sharing ideas and expressing emotions.[235]

Clearly, diners who pay hundreds of dollars for dinner at the world's elite restaurants are not merely seeking calories and nutrients. Nor are they attending simply because these restaurants produce better tasting food than is available elsewhere. If good taste was all they were after, they might stay home and eat large plates of bacon (and they would never pay to eat "burnt toast puree" at Alinea). Part of the attraction lies in the chef's ability to creatively manipulate foods in

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230 *Id.* at 340.

231 Herring, *supra* note 172, at 204.

232 *Id.* at 205; *see also* Oliver Sacks, *The Mind's Eye: What the Blind See*, *in* EMPIRE OF THE SENSES: THE SENSUAL CULTURE READER 25, 25–41 (David Howes ed., 2005) (describing the experiences of several blind persons and concluding that visual, auditory, intellectual, emotional, and linguistic experiences are fused together in one's mental landscape, rather than being separate).

233 *See supra* Part II.A.

234 *See, e.g.*, Carolyn Korsmeyer, *Introduction: Perspectives on Taste*, *in* THE TASTE CULTURE READER: EXPERIENCING FOOD AND DRINK 2–8 (Carolyn Korsmeyer ed., 2005) (describing chapters of the book that each challenge classic prejudices about food and drink).

235 *See* Buccafusco, *supra* note 25, at 1133–37.

ways that are expressive to the diners. The dishes represent a conversation between the chef and the diners in which tastes combine in ways that are delicious as well as playful, novel, and meaningful.[236]

Philosopher Carolyn Korsmeyer studies the ways in which foods create meaning. She notes, "tastes convey meaning and hence have a cognitive dimension that is often overlooked. Foods are employed in symbolic systems that extend from the ritual ceremonies of religion to the everyday choice of breakfast. Perhaps most obviously, eating is an activity with intense social meaning for communities large and small."[237] The most obvious way that foods express symbolic meaning is through what Korsmeyer calls "representational food"—dishes crafted to look like and remind the diner of something else, like croissants, pretzels, and the Eucharistic bread and wine.[238] Beyond simple visual representation, Korsmeyer explains that dishes can be expressive in less obvious and more culturally nuanced ways. She writes, "Independent of tradition and context, tastes are not by themselves the bearers of meaning any more than are the colors of paints straight out of the tube."[239] Particular tastes and the dishes to which they contribute take on meaning by association with various events, whether daily, weekly, or yearly. In the contemporary United States, turkey, stuffing, and pumpkin pie are associated with Thanksgiving, and a chef can use these ingredients outside of the holiday season to conjure some of the typical associations that diners have with these tastes.[240]

Alfred Yen has noted that copyright law, although purporting not to engage in aesthetic theorizing, in fact recognizes and uses a number of aesthetic theories, including formalism, authorial intent, institutionalism, and reader-response.[241] The above sections about tactile and gustatory communication make clear that these senses are capable of supporting aesthetic expression in a way that is qualitatively indistinct from the other senses and consistent with the aesthetic demands of copyright law.[242] To the extent that copyright law variously relies on theories that focus on authorial intent or reader-response, there are creators who intend their works to carry aesthetic

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236 *See id.*

237 CAROLYN KORSMEYER, MAKING SENSE OF TASTE: FOOD & PHILOSOPHY 4 (1999).

238 *See id.* at 118–20.

239 *Id.* at 136.

240 *See id.* at 137.

241 *See* Yen, *supra* note 170, at 251–52.

242 I do not here argue whether quantitative distinctions between the senses might remain. In such a case, IP law's separate treatment of the senses might arise from efficiency concerns about the respective probabilities of generating meaningful communication through the different senses. No one has yet proposed such an argument for their differential treatment.

meaning and a public who perceives them as so doing.[243] Moreover, one sees the development of institutional and formalist understandings of the aesthetic capabilities of these senses.[244]

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Writers in the tradition of Western aesthetic theory have long maintained that a qualitative divide separates the senses of sight and hearing from those of touch, taste, and smell. The high senses were thought to be nonfunctional and unconstrained, while the low senses were denigrated for their inability to carry meaningful aesthetic communication. New work in the social and behavioral sciences has undermined both of these suppositions. The differences between the senses' aesthetic limits and capacities now seem at best quantitative and potentially subject to change.

IV
UNIFYING SENSORY EXPERIENCE IN IP LAW

Copyright and patent law each seek to promote the welfare of society by encouraging the creation of valuable new works and inventions.[245] At first glance, it is difficult to understand why copyright law is deemed the appropriate home of some works while patent law is the domicile of others. Good paintings and comfy chairs each seem to be "useful" in some sense of the term. The foregoing Parts argue that the different treatment of the value of paintings and chairs is based on the different human senses to which those objects appeal. Copyright law has isolated works that appeal to the senses of sight and sound, while patent law has retained jurisdiction over works appealing to the senses of touch, taste, and smell as well as those that do not appeal to the body at all. This doctrinal distinction draws on a tradition in Western aesthetic theory that categorizes and ranks the senses as high and low based on their presumed capacity for aesthetic experience. This tradition treats the high senses as the unique province of unrestrained

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243 *See* Buccafusco, *supra* note 25, at 1134–35 (discussing the role of authorial intent and "reader" response in cuisine); Korsmeyer, *supra* note 234, at 140–41 (discussing one cook's attempt to send a message about her family's social and political situation by serving a thin, displeasing sauce to visitors); Dominic M.M. Lopes, *Art Media and the Sense Modalities: Tactile Pictures*, 47 PHIL. Q. 425, 431 (1997); Marieke Sonneveld, *Dreamy Hands: Exploring Tactile Aesthetics in Design*, *in* DESIGN AND EMOTION: THE EXPERIENCE OF EVERYDAY THINGS 228, 228–32 (Deana McDonagh et al. eds., 2004) (discussing a course in tactile aesthetics and its potential to expand participants' awareness of and sensitivity to tactile aesthetics).

244 As the plaintiff in the KOOSH ball case noted, museums are becoming aware of the value of allowing people to feel art. Museums dedicated to tactility now exist in Phoenix, Arizona, and Athens, Greece. On the formal character of culinary creation, see generally ANDREW DORNENBURG & KAREN PAGE, CULINARY ARTISTRY 61–85 (1996) (walking readers through a variety of considerations when composing a dish).

245 *See, e.g.*, Lemley, *supra* note 18, at 1694.

aesthetics and culture and the low senses as base, functional, and biological. New research in the social sciences and aesthetic theory, however, undermines this hierarchy.

This Part argues that IP law, at least as a formal, doctrinal matter, should recognize the unity of sensory experience. Appeals to the senses of touch, taste, and smell should join those of sight and sound in copyright's realm. Patent law should remain the appropriate method for protecting products whose function is not directed at communicating with the human body, as well as for "platform technologies" that enable but do not produce copyrightable expression (e.g., digital media, haptic devices, culinary methods, etc.). This Part will explore the contours of this proposal.

A. Uniting IP's Treatment of the Senses

IP law treats tactile, gustatory, and olfactory pleasures as functional and visual and aural pleasures as nonfunctional.[246] To the extent that these pleasures are valued as a source of immediate experiential pleasure, however, such a distinction is inappropriate.[247] As Rudolph Arnheim writes,

> [N]othing can be found that leads to a distinction between pleasure derived from art and pleasure derived from any other source, as, for instance, food. The erroneous impression that there is a specific "aesthetic pleasure" is due to the fact that a given component of a mental state receives, from the total state, modifications that are easily attributed to the nature of the component itself.[248]

The same can be said of the ideas and emotions communicated by touch, taste, and smell. Visual experiences are not qualitatively different from tactile experiences in their ability to communicate or express ideas, emotions, or pleasures.

Accordingly, IP law should treat the communication of ideas, emotions, or pleasures through any of the senses as nonfunctional expression. For example, if a designer creates a series of movements intended to communicate ideas, emotions, or pleasures to the senses of the performer of the movements, those features that so communicate are not functional in the copyright sense. In other words, a work does not automatically become a "useful article" solely because its intrinsic purpose is to express ideas to someone's senses.

This is not to say that any touch, taste, or smell should necessarily be copyrightable. To merit copyright protection, a work of authorship still must meet the requirements of originality and minimal crea-

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246 *See supra* Part II.B.

247 *See* DUTTON, *supra* note 22, at 52.

248 RUDOLF ARNHEIM, *Emotion and Feeling in Psychology and Art*, *in* TOWARD A PSYCHOLOGY OF ART 302, 311 (1966).

tivity.[249] A single touch should be no more copyrightable than a single musical note or a single word.[250] As with musical notes and words, the fundamental elements of touches, tastes, and smells are all in the public domain. Copyrightability, then, hinges on the author's ability to combine various features "'in such a way' as to render the work as a whole original."[251] This standard has been used successfully in copyright for compilation works, and it will likely prove helpful here.[252] The relevant question concerns the *manner* in which visual, auditory, tactile, gustatory, or olfactory features have been combined. The combination merits copyright protection if, when judged as a whole,[253] it constitutes an original and creative work of authorship.

To the extent that courts should draw distinctions between copyright and patent law,[254] patent law should retain jurisdiction over the standard technologies and inventions that make no reference to the human body (e.g., a new method for getting paint to dry more quickly or a faster pencil sharpener). These "external" functions are useful in the accepted sense of improving efficiency. Additionally, two classes of inventions that are directed at the human body would also still be appropriately classified as patentable subject matter.

The first class includes products that affect the human body but do not express or communicate ideas, emotions, or pleasures. This class might include devices that improve breathing, pastes that clean teeth, or drugs that lower cholesterol. Such products are used not for communication but to satisfy other nonexpressive or nonemotional preferences such as health or longevity. Such products are analogous to the use of a certain set of colors in a technological apparatus solely because those colors improved the functioning of the machine. Al-

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249 *See supra* note 23.

250 Producing a single emotion is not copyrightable. As Judge Goddard explained, "[e]motions, like mere ideas, are not subject to pre-emption; they are common property. It is the incidents or elements, or grouping of them, which produce the emotion [sic] that are to be compared. Similar emotions may be caused by very different ideas." Nichols v. Universal Pictures Corp., 34 F.2d 145, 147 (S.D.N.Y 1929).

251 Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 358 (1991) (quoting 17 U.S.C. § 101 (2006)) (discussing the requirements for a copyrightable compilation).

252 *See, e.g.*, Canal+ Image UK Ltd. v. Lutvak, 773 F. Supp. 2d 419, 430 (S.D.N.Y. 2011) (applying 17 U.S.C. § 101).

253 Ironically, the standard for determining the copyrightability of compilations—the "total concept and feel" test—employs a tactile metaphor. *See* Roth Greeting Cards v. United Card Co., 429 F.2d 1106, 1110 (9th Cir. 1970).

254 This Article does not express an opinion about the general merits of distinguishing between copyrightable and patentable works. Some copyrightable works may share more with patentable inventions than they do with other copyrightable works (e.g., copyrightable computer software may be more like patentable computer hardware or business methods than it is like movies or sculptures). However, I simply argue that such distinctions should not be made on the grounds of the perceived functionality or nonexpressiveness of certain senses.

though they are capable of being seen, they are functional and not copyrightable.

One way of determining whether a given product falls into this "functional" category is whether it is amenable to critical discourse. For this purpose, expressive acts are generally susceptible to criticism about the *manner* in which they have achieved their goals. For example, we might critique the manner in which a painter chose to express the emotion of anger or a chef symbolized spring in New England. According to Denis Dutton, such enterprises are generally complex and open ended.[255] In contrast, he notes that "[t]here is generally no criticism applied to performances in the hundred-meter dash: the fastest time wins, no matter how inelegantly."[256] The same may be said about cough suppressants and antifungal creams.[257]

The second class of products directed at the body that should nonetheless be subject to patent protection are devices that serve as platform technologies that enable but do not produce expression. Just as the first person to discover papyrus could not have received a copyright, so one who develops a new method for generating tactile, gustatory, or emotional experiences has generated nothing copyrightable. Such technologies do not contribute any expression in their own right; they merely make expression possible. Accordingly, new haptic devices, cooking methods, or atomizers deserve only patent protection, if they deserve any IP protection at all.

This proposal will not obviate the conceptual separability analysis for works that are appropriately classified as useful articles. Under the proposed regime, that a work's intrinsic function is to communicate ideas, emotions, or pleasures to the senses will not make it a useful article. Nonetheless, many products have features that combine visual and tactile expression and standard, external functionality. The current approach to the senses asks whether the visual design features are conceptually separable from the tactile and functional features.[258] This Article's proposal, in contrast, would ask whether combination of visual and tactile features is conceptually separable from the functional component.

Consider, once again, the KOOSH ball. As the hypothetical examples at the beginning of this Article suggest, the KOOSH ball had three distinguishable features: (1) it was easy for children to catch; (2) it created pleasurable tactile sensations; and (3) it was visually appeal-

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255 *See* DUTTON, *supra* note 22, at 55.

256 *Id.*

257 Although we might want these products to avoid producing other inelegant side effects.

258 *See supra* Parts I.A, I.C.

ing.[259] The Register of Copyrights and the district court treated the first and second features as functional and therefore not subject to copyright's separability analysis.[260] This Article's proposal, however, would treat only the first feature as functional, and it would perform the appropriate separability analysis on the combination of the second and third features.[261] It might ask, for example, if the combination of tactile and visual features was designed independently of the ball's function of being easily graspable,[262] whether the combination engenders in the mind of the beholder the concept of a work of art,[263] or whether there would be a market for the work if it did not function.[264]

The proposed change would result in substantially different doctrinal treatment of a number of areas of creative expression. I want to be clear: *this Article takes no position on the economic value of such changes.* Many realms of creative expression currently lack strong IP protection but nonetheless seem to function efficiently.[265] In those cases, doctrinal changes that created IP rights where none had previously existed would result in inefficient deadweight losses. Those fields, however, should be denied copyright protection on welfarist grounds rather than on the basis of an incorrect and disingenuous assertion that they are functional. Additionally, there might be other legitimate grounds for making doctrinal distinctions between the senses that would not be problematic. For example, if the error costs of administering the copyright system for these works were too high or the number of works that would qualify for protection were too low to justify the benefits of protection, then sensory distinctions would be acceptable.

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259 *See supra* Introduction.

260 *See* OddzOn Prods., Inc. v. Oman, CIV. A. No. 89-0106, 1989 WL 214479, at *1–*3 (D.D.C. Oct. 3, 1989), *aff'd*, 924 F.2d 346 (D.C. Cir. 1991).

261 This Article takes no position on the propriety of the test for conceptual separability or about the relative merits of design patent or copyright protection for useful articles.

262 *Cf.* Pivot Point Int'l, Inc. v. Charlene Prods., Inc., 372 F.3d 913, 931 (7th Cir. 2004) (addressing whether the design of a mannequin's face reflected choices related to its utilitarian function).

263 Carol Barnhart Inc. v Econ. Cover Corp., 773 F.2d 411, 422 (2d Cir. 1985) (Newman, J., dissenting) ("[T]he requisite 'separateness' exists whenever the design creates in the mind of the ordinary observer two different concepts that are not inevitably entertained simultaneously.").

264 *See* Poe v. Missing Persons, 745 F.2d 1238, 1243 (9th Cir. 1984) (holding that evidence bearing on a design's marketability is relevant to determining that design's aesthetic qualities); *see also* 1 NIMMER & NIMMER, *supra* note 131, § 2.08[B][3] ("[C]onceptual separability exists where there is any substantial likelihood that even if the article had no utilitarian use it would still be marketable to some significant segment of the community simply because of its aesthetic qualities.").

265 *See* Buccafusco, *supra* note 25, at 1149–51 (food and restaurant industry); Dotan Oliar & Christopher Sprigman, *There's No Free Laugh (Anymore): The Emergence of Intellectual Property Norms and the Transformation of Stand-up Comedy*, 94 VA. L. REV. 1787, 1789–1809 (2008) (stand-up comedy); Raustiala & Sprigman, *supra* note 125, at 1698–1705, 1745–62 (fashion industry).

These would be distinctions based on legitimate legal and policy grounds, however, and not on incorrect analysis and reasoning.

It is worth briefly noting some potential doctrinal changes that this Article's proposal could bring about:

1. *Dance, Exercise, and Movement*

The current copyright statute provides protection for choreographic works that are fixed in a tangible medium of expression.[266] Initially, such works were copyrightable as dramatic compositions if they attempted to tell a story or convey some dramatic concept.[267] Congress later removed that requirement to allow copyright for nondramatic and nonrepresentational choreographic works.[268] Nonetheless, choreographic works are currently copyrightable on the basis of the visual expression of ideas or emotions to the audience. The law does not countenance the possibility of expressing ideas or emotions directly to the performers through the movements of their bodies and the tension of their muscles.[269] My proposal would allow copyright law to incorporate that expression.

This proposal has significant implications for the copyrightability of a variety of physical practices that generate proprioceptive pleasures and emotions, including martial arts, yoga, and pilates. In a recent case, a court declared that the selection of a series of yoga poses might demonstrate sufficient creativity to warrant copyright protection.[270] This opinion has been the subject of considerable criticism from the scholarly community. According to William Patry,

> Choreography is concerned with the aesthetic expression of ideas, whether of a storytelling or abstract nature. Exercises are functional: If you do these routines, purported health, emotional, or

266 *See* 17 U.S.C. § 102(a)(4) (2006).

267 *See* Horgan v. MacMillan, Inc., 789 F.2d 157, 160 (2nd Cir. 1986).

268 *See id.* at 160–61.

269 Paul Bloom's comments about music are also relevant to dance:

> Most languages have a single word for both singing and dancing, and when people listen to music while perfectly still, parts of the motor cortex and cerebellum—the segments of the brain that have to do with moving around—are active. . . . It would be a scientific misstep, then, to develop a theory of music that took the solitary and still appreciation of tonal patterns as the central phenomenon that has to be explained. This would be like a theory of sex that only studied phone sex or a theory of food preference built around research on people with no sense of smell.

PAUL BLOOM, HOW PLEASURE WORKS: THE NEW SCIENCE OF WHY WE LIKE WHAT WE LIKE 125–26 (2010). Similarly, it would be a misstep to have a theory of dance that only accounted for the visual pleasure of seeing the dance, while ignoring the sensory pleasure of performing it.

270 *See* Open Source Yoga Unity v. Choudhury, No. C 03-3182, 2005 WL 756558, at *4 (N.D. Cal. Apr. 1, 2005).

> mental benefits will result. Some routines may be more pleasing to look at than others, but that is unrelated to their purpose.[271]

Patry has followed IP law's traditional sensory dichotomy by distinguishing between the potentially copyrightable visual form of movements and their functional bodily feel. The appropriate distinction, however, is between those features of the movements that are performed to express ideas, emotions, or pleasures to the audience and the performers and those that are performed for functional goals like improving physical health. Only if the movements are performed for the inherent function of improving health should they be considered useful, and then, only those components that are truly functional should be separated.

In addition, under my proposal, rollercoasters that are designed to convey a series of ideas, emotions, or pleasures to their riders would be subject to copyright protection. The original and minimally creative compilation of design elements in a rollercoaster would merit copyright protection for the sequence of feelings that they create in the bodies of their riders.

2. *Tactile and Ergonomic Products*

The designs of many products aim to create pleasing tactile sensations. Clothing incorporates fabrics that feel good on the skin, furniture is designed to generate a sense of bodily balance, and product packaging can communicate information about the product.[272] These and other tactile and ergonomic components may be eligible for copyright protection to the extent that they communicate ideas, emotions, or pleasures and are conceptually separable from the aspects that function to protect the skin, improve the posture, or enclose the product, respectively.

3. *Culinary Dishes*

I have argued at length elsewhere that culinary dishes can meet the formal demands of copyright law.[273] While food consumption is related to the functional caloric and nutritive demands of the body, many aspects of eating are unrelated to the utility of minimal survival. Almost all of our nutritional needs could be met without regard to the flavor or aroma of the products that we eat and drink. For example,

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271 2 WILLIAM F. PATRY, PATRY ON COPYRIGHT § 4.22 (2010).

272 *See* Terry L. Childers & Joann Peck, *Informational and Affective Influences of Haptics on Product Evaluation: Is What I Say How I Feel?*, *in* SENSORY MARKETING: RESEARCH ON THE SENSUALITY OF PRODUCTS 63, 63 (Aradhna Krishna ed., 2010) ("The role of touch in product evaluation is emerging as an important area of study in marketing and consumer behavior." (citations omitted)).

273 *See* Buccafusco, *supra* note 25, at 1130–40.

we may need to eat, but we do not need to taste. Accordingly, the aspects of culinary creations that are added to the basic nutritional components of food products will often constitute separable efforts to communicate ideas, emotions, or pleasures to diners.

I offer these observations as a purely doctrinal matter. In each of these fields where copyright protection is unavailable, the law probably reaches the right conclusion but for the wrong reason. It is unclear whether the benefits of protecting products in these fields would outweigh the costs. For example, creativity in the food industry appears to be not only surviving but thriving despite a lack of strong IP protection.[274] Systems of social norms and a culture of sharing promote creativity and police piracy, at the same time avoiding the deadweight losses associated with formal IP rights. Nonetheless, the copyright system is better off if it is clear that withholding IP protection from cuisine is based on utilitarian principles and not the "functionality" of culinary creations. The same reasoning holds for the other products described above. Although formal IP protection may not be warranted for dishes, fashion design, yoga, or rollercoasters given the current state of incentives in those fields, it is possible that we may want to revisit this conclusion at some point in the future. If we do, it is important that we understand how the senses function in communication.

CONCLUSION

Both Bruce, the industrial designer, and Catherine, the visual artist, contributed directly to the intellectual, hedonic, and emotional well-being of society through their KOOSH ball creations. Alice, the mechanical engineer, in contrast, discovered a valuable method for accomplishing a separate, external goal. All three designers are worthy of encouragement, but no sound principle exists for distinguishing between Bruce's and Catherine's contributions. That Bruce intended his design to appeal to the touch while Catherine intended her design to appeal to sight should not result in drastically different treatment by IP law. To the extent that it has in the past, this differential treatment has been based on problematic assumptions about the differences between the senses. IP law should evolve as our understanding of creativity and expression does, and it should eliminate the distinction between the senses. If Huxley's "feelies" ever become a reality, copyright law should embrace them.

274 *See id.* at 1151–55.